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THE TRUSTS NOT SO TERRIBLE.

THERE appears to be little attention given, in current political discussions in the United States, to the idea, at one time so widely ventilated, of governmental regulation of Trusts, with a view to preventing them from gaining control of the whole field of industrial production in this country. A year or two ago there were many people who seriously considered it the first duty of the government to act promptly for the protection of the masses against the Trusts. This journal has more than once hazarded the opinion that before the attention of Congress could be concentrated upon this subject, some of the so called Trusts, instead of needing to be curbed, would be in need of protection from falling down through sheer weakness. Recent events seem to confirm this view.

Lately the public has been treated to some sensational testimony, in legal proceedings growing out of an attempted combination of shipbuilding concerns, the details having been brought out more fully than in any like case in the past, and the effect cannot fail to be to make investors more cautious for awhile in regard to industrial securities. Without questioning the motives of the first movers in the proposed shipyards consolidation, it is plain that the object of those who assumed control of the financial transactions were not at all concerned about shipbuilding. Their program was to manufacture certificates of stock which it was hoped the public would buy, without asking whether these shares represented anything of intrinsic value. If, after their sale, the shares should prove worthless, the promoters who stood as vendors expected to be able to avoid all responsibility. The public failed to become interested, however, and the promoters now hold a mass of "securities" of little value to them as capital. Meanwhile the shipyards have not ceased to exist, and efforts are being made to settle the question of ownership, that orders for work now in sight may be utilized.

Doubtless these disclosures will be recalled whenever, for sometime to come, the public is invited to invest in the capital of new industrial consolidations. And naturally one effect will be to place a stigma upon Trusts in general. Yet this shipbuilding case is entirely apart from the Trust question. The real question is whether commodities can be produced more economically by combining a number of plants than by operating them independently, and, if so, whether the field is narrowed for small or individual enterprises. The history of the attempted shipbuilding Trust proves nothing whatever under this head. In that case certain persons of prominence in the financial world, seeing a new movement on foot to combine industrial plants, offered to "finance" the transaction, their pay to be in the shape of some millions of dollars of promoters' shares. Combining the shipyards might or might not have been good business; creating an excessive amount of promoters' shares was very bad business, comparable to "salting" a gold mine, or to hypothecating the same warehouse receipts with two banks. It has been a great blow to Trust development.

But if public sentiment is less alarmed than formerly in

regard to the Trusts getting control of all the industries and compelling the payment of exorbitant prices for manufactured commodities, there is evidence of a growing demand for the protection of investors against worthless corporation stocks. To day banks are so closely regulated by law that no holder of a banknote need fear its possible depreciation in his hands. The States also practically guarantee the reliability of the insurance companies, while railway companies are required by law to report so fully in regard to their condition as to enable everybody to judge of the value of their shares. It will not be strange if a demand should next arise for the safeguarding of the public against the sale of stock certificates without some basis of value. Without doubt there is room for useful legislation here, but complete protection of the public will never exist. Before the first joint stock company was, people with more money than judgment easily found chances to make themselves poor, and if it should now become impossible to buy any but "gilt edge" stocks, somebody would begin selling town lots in the moon to investors who prefer foolish to wise use of money.

Many so called Trusts organized during the past few years have ceased to exist, and not all the others are facing the future with equanimity. Some very big concerns have been worried by the competition of the once despised "little fellows" on the outside. Another cause for discomfort is the prospect that, in the event of the dissolution of many a big concern, the distribution of its assets might be very one sided. It is said that Mr. Carnegie put his steel works into the control of the steel Trust on terms which will enable him to take them back in case the Trust fails, regardless of what the other shareholders may get, and the steel Trust is not exceptional in this regard. Altogether the existing Trusts appear to have enough trouble of their own not to need congressional action to protect anybody against them, while the disclosures regarding the projected United States Shipbuilding Co. will serve for a long time to discourage the organization of new companies capitalized for many times their real value.

THE BRAZILIAN TAX ON RUBBER.

AMAZONAS is truly a state that lives by rubber. Not only is rubber the source of income of the people there who work and of those who engage in trade, but it is especially the source of the public income. It even supports people who neither work nor trade, judging from the recommendation by the governor at Manáos, in his last message to the state legislature, that fifteen "worse than useless" revenue stations be closed, they not having collected a cent for a year, though the officials regularly drew their pay.

According to Governor Nery, the state revenue in 1902 was equivalent to $3,109,814.24, of which all but $33,913.21 —about 1 per cent.—resulted from the tax on rubber exports. We believe that the theory prevails in the Amazon states that the foreigner pays the tax on rubber; therefore, no matter how high the rate, no burden falls upon their own people. But the theory is a mistaken one. Their rubber would bring precisely the same price in the consuming markets, taxed for export or untaxed, and every *milreis* exacted at the Manáos or Pará custom houses leaves so much less for the citizens of those states than they would have if the government kept its hands off. Everybody in Amazonas believes that rubber from that state is smuggled across the rio Javary and then sent down the Amazon as the product of Peru, thereby avoiding the payment of duties to any Brazilian state. Yet in New York that rubber brings the same price, grade for grade, as the rubber taxed at Manáos. Which indicates that the seller of untaxed rubber gets more for his product than the other fellows.

Of course the state is bound to have a revenue, and the only resource of an undeveloped state is to put a tax on the natural products exported. The people on the Amazon do nothing to make their lands valuable, and therefore taxable; there are no corporations, to pay for franchises; there is practically nothing in that region but a natural monopoly of rubber of a grade that is much wanted by the outside world. And when this want operates to induce the natives to work in the *seringaes*, the government thinks to make the unloved "foreigner" pay dearly for the rubber by imposing as a tax "all that the traffic will bear." The Brazilians really pay the taxes, as they ought to do, but perhaps the rate would be lower if they better understood the situation—and if they ever stopped to ask what the government gives them for their money.

From Governor Nery's message it is possible to compute the average tax on rubber at Manáos during 1902 at 10.2 cents per pound—assuming 12 pence to have been the average exchange for the *milreis*—and as the tax is 20 per cent. *ad valorem*, the average export price of rubber at Manáos would work out at 51 cents per pound for all grades, including Caucho. It is interesting to note in this connection that the average import value of all Brazilian rubber into the United States during 1902 was 49.9 cents per pound, showing that the Manáos authorities were careful to avoid undervaluation.

BLUE, GREEN, AND RED LATEX.

IT is said that experimenters in Roubaix, France, have succeeded in making silkworms do their own dyeing. By feeding the voracious caterpillars on leaves containing a natural or artificial pigment, they have obtained raw silk in red, blue, and bright orange. We may before long see "natural colored silk" made and sold—no doubt at a fancy price.

Now your up-to-date rubberman does not let anything of that sort happen without beginning to think. He knows that certain shades of color in rubber are much to be desired, but have never yet been obtained in the crude article. He wonders if things have gone back far enough, and straightway places an order for certain chemicals and pigments to be shipped to his plantation.

It does not yet transpire what the outcome will be, but fancy pictures the time when carefully prepared crude rubber will be shipped in assorted colors from the tropics. The blue will be tinged by the infusion of indigo poured about the trees in one section of the plantation, while red and orange and green will be secured by other pigments.

REPORT OF A GERMAN RUBBER FACTORY COMPANY.

AT the general meeting of the Aktiengesellschaft Vereinigte Gummiwaaren-Fabriken Harburg-Wien, at Harburg a/d Elbe, Germany, on October 24, the directors presented their report for the thirty-first business year of the company, ending June 30, 1903. In addition to a detailed balance sheet, the directors presented a general report to the shareholders, a translation of which is given below, as likely to be of interest to many readers outside of Germany in showing to what extent the holders of shares in corporations in that country are taken into the confidence of the management.

GENTLEMEN: The business year closed on June 30 shows a result slightly lower than that of last year, although our factories were actively employed in all branches and our output was in advance of that of last year. The major portion of this increase is due to our Harburg factory, being equally distributed over all its branches of manufacture; our exports also exceeded those of last year.

Our factory in Wimpassing, Austria, has been used principally for export purposes. Owing to the unchanged economic conditions of Austria-Hungary and on account of its unfavorable geographical location, increased expenditures were entailed. Our Linden works have given satisfactory results, and it is hoped that by taking up new branches and new articles of manufacture it will continue to develop.

The convention on rubber balls during the past year had excellent results and has been extended for a further term of five years.

As recorded in our last report, our new product "Galalith," has been taken up as a regular manufacture, but the special arrangements for its manufacture in our new building will not be completed until the end of this year, and only after that has been completed can we expect to produce it on an extensive scale. At present we can only say that the samples furnished by us to the several industrial branches during the past year have given entire satisfaction, and we hope that the development of this branch will prove to be profitable.

The crude rubber prices experienced during the past business year an advance without comparison since 1899–1900; this advance dates from August and September of last year. The advance in crude rubber prices, compared with the former year was as follows:

Fine Pará	49 per cent.
Manáos scrappy	43 per cent.
Better African middle sorts	56 per cent.
Inferior African sorts	92 per cent.

This enormous advance in prices is chargeable in the main to the large consumption and comparatively small supplies. The latter amounted to, according to statistics on hand at the end of August:

	1901	1902	1903
Tons	3894	3074	1846

The total world's production of rubber amounted during the period of—

July 1, 1901, to June 30, 1902, to..... 53,887 tons
July 1, 1902, to June 30, 1903, to..... 55,603 tons

The total world's consumption of rubber during that period was—

July 1, 1901, to June 30, 1902..... 51,170 tons
July 1, 1902, to June 30, 1903..... 55,276 tons

The total world's supply on hand amounted, during that period to—

July 1, 1901, to June 30, 1902..... 6,816 tons
July 1, 1902, to June 30, 1903..... 5,053 tons

These figures prove, that although the production has slightly increased, the consumption, comparatively, was far in excess, and the visible supply therefore decreased quite materially. The reason for this large consumption is not to be attributed to business prosperity of the various countries, but mainly to the fact that the bicycle branch consumes immense quantities for its purposes; besides bicycles in the larger cities, many public vehicles and equipages are mounted with rubber tires.

At the present time it cannot be foreseen how far the crude rubber prices will advance, until a sufficient amount can again be accumulated in store to enable the factories to complete their necessary supplies, which at present are entirely depleted, and purchases are made only as far as actual necessities require. The prices of other articles used in the rubber goods manufacture also have materially increased, in some instances from 20 to 30 per cent. That these unfavorable conditions finally affected the profit account of the individual factories is self-evident.

If, notwithstanding, we were enabled to do a profitable business during the past year, we are indebted, primarily, to the large stock of crude rubber which we carried over into this year's account, having been bought at a low figure, and, secondly, to the increased volume of business done to which we have already referred.

The selling prices of our goods, owing to the low prices of crude rubber during 1901-02, had a dropping tendency. When, in the autumn of last year, crude rubber prices began to advance at an enormous rate, we were compelled to make an advance in prices, and we were successful, in harmony with other German rubber goods manufacturers, in carrying through a 10 per cent. increase, which, unfortunately, could not go into effect until April 1, of this year.

The magnitude of our factory, and the large number of hands employed, make it imperative that we secure contracts for some time in advance. We are obliged to enter into contracts for future delivery of articles controlled by the seasons, such as shoes, the orders for which are generally received at the beginning of the year, and the deliveries made during the summer and autumn; and, as it is impossible to find a dealer in crude rubber who will take a contract for the year, at monthly deliveries, it is impossible to avoid using raw material purchased at the advanced price in filling orders contracted for at the lower figure.

To keep abreast with the continued high prices of crude rubber we are now endeavoring, with other manufacturers, to advance the prices of rubber goods 10 per cent., for the present, but, should prices continue to rise, the prices of manufactured goods will have to be advanced accordingly.

The importation of rubber shoes from foreign countries has increased, owing to the low import duties imposed on them. The imports from the United States alone, for instance, were 119,300 kilograms in weight against 38,100 kilograms in the year 1900. The import from Russia advanced from 450,100 kilograms during 1901 to 527,300 kilograms. Besides this, Sweden unloads her overproduction of rubber shoes here, while it is impossible for us, owing to the prohibitive tariff of the three countries named, to sell a single pair of shoes there. In the following named countries the import duty on rubber shoes,

and the equivalent rate *ad valorem*, is as stated in the table:

	Per 100 kilos.	Ad Valorem.
In Germany	60 marks	10 per cent.
In Russia	222 marks	35 per cent.
In Sweden	135 marks	22 per cent.
In the United States		30 per cent.

We hope and expect that in making the new trade agreements with these countries, they will receive such consideration as not to compel us to curtail the manufacture of such necessities as rubber shoes, or, eventually, to cease manufacturing them altogether; and we also hope that the export of other articles to foreign countries will be maintained for us.

Passing to our balance, we have to report, that in our three factories, Harburg, Linden, and Wimpassing, the amount of *M* 533.305.96 had to be expended for new appliances; for new buildings, *M* 207.347.41; for new articles (machinery account), *M* 271,290.04; for new utensils and furniture account, *M* 54,668.51; for liquidations, *M* 144,011.35. The expenses for repairs were *M* 458,415.37 against *M* 479.031.87 in the former year.

The inventory of goods and raw material on hand has been made carefully, in compliance with the provisions prescribed by law, and amounts to *M* 636.650.11 less than in the former year. The patent account has been debited *M* 294,000 for patents on Galalith already obtained, of which during this year *M.* 132,104 50 have been written off, so that this account appears in the balance only with *M* 161,895.50.

The supreme court having decided that the premiums received on the issue of new stocks are nonassessable, the amount of *M* 96,615, paid during the years 1900 to 1903, has been returned, and this, with the amount of *M* 80,859.25, which was held in reserve on that account and has now become free—altogether *M* 177,474.25—has been placed to the credit of the regular legal reserve fund, which now amounts to *M.* 3,279,339.25, or about 54.6 per cent. of the stock capital.

The doubtful collections account has been written off *M* 10,076.57 less than in the former year, we having been free from any great losses.

The social politic and voluntary contributions were *M.* 116,858.68, of which the widows and orphan pension fund of the officers and master workmen received *M* 34.368.80. From the interest on the aid fund of *M* 400,000, pensions and aid were received by 79 persons.

The gross profits of the goods account amount to *M.* 3.374,100.67 [=$803,035 96], against *M* 4,015,875.07 of the former year, being less by *M* 641,774.40.

The net profit for the thirty-first business year of the company amounted to *M.* 1,460,070.45 [=$347,496.77], and was disposed of as follows:

Net Profit for the year	*M*	1,460,070.45
Less addition to Reserve Fund No. 2		24,749.56
	M	1,435,320.89
Dividend 5 per cent. on the entire Capital		300,000.00
	M	1,135,320,89
Less 10 per cent. Commission to the Directors		113,532.08
	M	1,021,788.81
Add Balance from profits of 1901-02		142,418.25
	M	1,164,207.06
Dividend 15 per cent. on the entire Capital		900,000.00
	M	264,207.06
Officers' and Workingmen's Jubilees *M* 10,000		
Officers' Pension Funds	50,000	60,000.00
Balance to 1903-04	*M*	204,207.06

THE total dividend on last year's business is 20 per cent

Following is a comparative statement of the company's net profits for five years past, and the rate of dividends:

YEARS.	Net Profits.	Capital.	Dividends.
1898-99	*M.* 866,644.67	*M.* 6,000,000	12 %
1899-00	1,336,631.99	6,000,000	17½ %
1900-01	1,489,537 05	6,000,000	20 %
1901-02	1,775,032.57	6,000,000	24 %
1902-03	1,460,070.45	6,000,000	20 %

RUBBER INTERESTS IN EUROPE.

ADVANCE IN RUBBER GOODS.

ON October 10 an advance in rubber goods prices took effect in Germany as a result of a meeting of rubber manufacturers held at Hanover, the occasion for which is expressed in the following terms in a circular issued after the meeting:

The continuous advance of crude rubber prices, which, within the year, have reached, according to quality, a rise of from 50 to 90 per cent., the rubber factories are compelled, in order to secure to their customers the present standard quality, to advance their selling prices a further 10 per cent. on all articles of soft rubber for technical and surgical purposes.

The *Gummi-Zeitung* asserts that this action by the manufacturers is justified by existing conditions in the trade, besides which it points out the probability of a further advance in the near future owing to the limited supply of crude rubber as compared with the demand.

THE India-Rubber Manufacturers' Association of Great Britain, in a circular issued from the office of their secretary at Manchester, on September 24, announced that "in consequence of the continued serious advance in the price of raw rubber, the prices of all manufactured rubber goods are advanced 10 per cent., with effect from this date, with the following exceptions—namely, thread, fine cut sheet, proofing, shoes, and asbestos goods, which are being separately dealt with."

The *India-Rubber Journal* points out that the preceding advance on the price of mechanical rubber goods had been far better maintained than any previous combined advance by the British manufacturers. It trusts that the course of the manufacturers' association will be followed by such other firms as are not embraced in its membership.

GERMANY.

THE Asbest- und Gummiwerke Alfred Calmon, A.-G. (Hamburg), already mentioned in this Journal as having taken on the manufacture of rubber shoes, are now marketing their products in this line.

=The Vereinigte Hanfschlauch- und Gummiwaaren-Fabriken, A.-G., of Gotha, were awarded a silver medal for their display at the German Cities Exposition at Dresden. A bronze medal was awarded to H. Schweider, Sächsische Gummi- und Guttaperchawaaren-Fabrik, of Dresden.

FRANCE.

R. DE LA DEBUTRIE, at Lille, importer of British and American waterproof goods and sporting goods, has removed from 3, place de Rehour, to larger premises at 62, rue Esquermoise.

GREAT BRITAIN.

THE Liberian Rubber Syndicate, Limited, an English company holding a rubber trading monopoly in Liberia, exported from that republic 85.303 pounds of rubber during the year ended September 30, 1902.

=At Preston (England) two prisoners convicted of stealing 162 pounds of India-rubber and 262 pounds of Kowrie gum, were sentenced to three and nine months' imprisonment, respectively.

RUBBER STOCKS, PRICES, AND SPECULATION.

THE charts which have appeared lately in THE INDIA RUBBER WORLD show how wide is the range of fluctuations to which the crude rubber market is liable, especially if a term of years be taken into consideration. The marked advances and declines may not be repeated with any sort of regularity, but it is safe to assume that the same relation of cause to effect exists whenever prices go to an extreme level. Five and a half years ago, when the market had an upward tendency, and manufacturers were concerned about the future of prices, THE INDIA RUBBER WORLD gave space to an extensive discussion of the question "Has There Been Speculation in Rubber?" suggested by the feeling in some quarters that the then prevailing high prices were due to manipulation by selling interests. On looking back through our files we find two articles—from well informed sources—that have so direct a bearing upon the market conditions of to-day that it seems worth while to reproduce them, without any change. The reader should keep in mind, however, that the references to dates and prices in the lines which follow applied to the early part of 1898, and not to the latter end of 1903. Otherwise, the articles might have been written in the very same terms this month.

A LARGE MANUFACTURER SAYS "NO."

[From THE INDIA RUBBER WORLD, February 10, 1898.]

"I DO not believe that there is or has been any speculation in crude rubber that can be charged with its high cost to-day," said another manufacturer. "I am a large buyer of rubber, and long have been, and I believe that I can detect a speculative element in the market when one exists. I get reports from importers in New York and Liverpool, and from the leading shippers in Pará, and when I know certainly how much rubber is being shipped, and who receives it, and all the various reports of stocks on hand agree to within 50 tons, I am inclined to believe the reports to be correct. Why, there are no large stocks of rubber anywhere to speculate on. You can't hide rubber. The rubber merchants are strong competitors one with another in Pará, they are so in New York, and they are so in Europe, and every shipment is kept track of until it is in the hands of the manufacturers.

"In New York for months past all arrivals have been turned over at once to manufacturers. There is rubber due us to-day, rubber that we ordered months ago, which the importers assure me cannot be had. There is no such rubber in stock. Don't you think that they would be delivering the rubber and collecting for it if they could get it? At the same time we are receiving rubber now, bought some time ago, at the prices prevailing then, for future delivery, which is costing the importers more money than it is billed to us for. Here is a bill for a lot of rubber now on the way to our factory, at 12½ cents a pound less than we could go into the market to-day and buy it at, but we contracted for it early in the season. If the current prices of rubber were the result of speculative movements, do you think that our importers would have got themselves into such a fix as this? Several months ago we began to observe how closely the factory demand here kept up with the arrivals of rubber, and began buying for forward delivery. We have orders out for delivery in May, and the saving by this course has been very important.

"I believe that fine Pará rubber will shortly reach $1; it isn't so far from it now. The increase in production down there is never large from year to year. It can't be. Then Madagascar rubber has fallen off; we can't buy Assams at any price; it is hard to get Benguela sorts, and so on. The people who talk about prices being due to speculation are not well informed. There never has been less of it in the market than to-day. We are declining orders for rubber goods for future delivery at present prices, in view of the probability of still higher crude rubber."

A TALK WITH A BROKER.

[From THE INDIA RUBBER WORLD, February 10, 1898.]

"WHEN I am asked how far the high prices of rubber are due to speculation," said a broker, "it must first be understood in what sense that word is used. To a certain extent all buying and selling is speculation. But you mean, of course, the buying of rubber by large operators, with the object of gaining control of heavy stocks, in order to be able to sell out at higher prices when manufacturers' supplies have become exhausted, and their needs compel them to pay practically whatever may be asked. There is another class of buying which is also speculative—where people outside the trade invest in rubber, in the hope of a rise, just as they would take a 'flyer' in wheat or in stocks. My answer to your question is that I don't believe there has been enough buying of rubber in either of these classes, in a good many years, to have influenced prices. Certainly there has not been of late."

"What is the true explanation of the present dearness of rubber?" the broker was asked.

"It is a question of supply and demand. We must all the time take account of stocks. Other things being equal, the price of rubber advances as stocks decline, just as with other commodities. Whenever the available supplies of rubber become low, either from a shortage in production or because of activity in manufacturing, sellers become firmer in their demands and prices go up. We know that the production of Pará rubber has not fallen off, and yet the visible supplies of this class at the beginning of this year were smaller than at the same date in any year since 1882. Pará rubber stocks generally have been smaller for three years past than formerly. There is good reason for believing that the rubber has been bought on factory account, instead of being withheld from the market for speculative purposes. In the case of Africans, however, excepting Congo sorts, there has been some decline in the output, which has helped to sustain prices."

"Can the world's supply of rubber be estimated accurately?"

"No. It is to every importer's interest to conceal the amount of his holdings, and as statistics of rubber stocks are based usually on statements made by the importers, it is plain that these figures are not always a safe guide. One never knows at what moment an unsuspected lot of rubber may be brought from its hiding-place, to the confusion of his best-laid plans to profit from a particular situation in the trade. On the other hand, all the rubber produced in the world, at some stage, is accounted for in governmental statistics, which have the confidence of the trade, and which serve to aid in checking private estimates as to the total volume of transactions. Besides, the broker who is on the alert generally can detect movements of a speculative nature."

"But people speculate in other commodities; why not in rubber?"

"First, there are no such organized facilities for trading in

rubber as, for instance, in wheat. Rubber can't be bought on 'margin.' In the next place, it is not a safe commodity to carry. You may buy wheat, and it doesn't deteriorate in quality or quantity. Buy whiskey, and the leakage for a given time can be calculated to mathematical accuracy. But buy rubber, and no man on earth can predict the extent of the shrinkage. An outsider once, who had noticed that rubber sometimes fluctuated, instructed me to buy a lot for his account, and then waited for a rise. When he had grown tired waiting, and gave orders to sell, he found that not only had the rubber declined 10 per cent. in the market, but it had lost 7 per cent. in weight, making him a loser in two ways."

"Would it be possible to 'corner' the market for Pará rubber in these days?"

"It would be a very difficult undertaking. The Pará rubber output for 1897, figured at the prices prevailing there at the end of the year, was worth not less than $34,000,000. The people who bought this rubber did so with the expectation of a quick turnover, in order to be able to use their capital again. Now, in order to gain a controlling interest in the Pará market it would have been necessary from the start to pay more for rubber than the prices at which manufacturers, in the ordinary conduct of their business, buy freely. There would have to be taken into consideration the interest charges on the large capital involved, and the heavy loss from shrinkage in case any rubber was held long, not to mention the possibility of having finally to unload some of it at less than cost. There are many goods made of rubber for which consumers will not pay a high price, for which reason there are limits in cost that a manufacturer cannot go beyond. Then there are other rubbers. When Vianna got up his great rubber 'corner' some years ago, although he made an utter failure, he frightened manufacturers into experimenting with other sorts than Pará, giving rise to the present large use of Africans. As compared with Vianna's day, the Pará crop is now twice as great, and the business is scattered over Brazil, Peru, and Bolivia, and harder to control than when, as he found it, all centered at Pará. And the value of African rubbers is now assured, whereas it had then to be learned.

"There was a good chance for speculating in Pará rubber within the past year," the broker went on. "The demand has been so great that any one buying largely at an advance over the market prices, could have unloaded at a still greater advance, but the importers didn't recognize it until it was too late. There was an equally good chance two years ago, at the beginning of the 'boom' in rubber consumption in Europe. The importer who could have foreseen the heavy demand there, and bought largely while prices were still low, could have unloaded at better profits than most of them did pocket in the end."

"Where are rubber prices made, as a rule?"

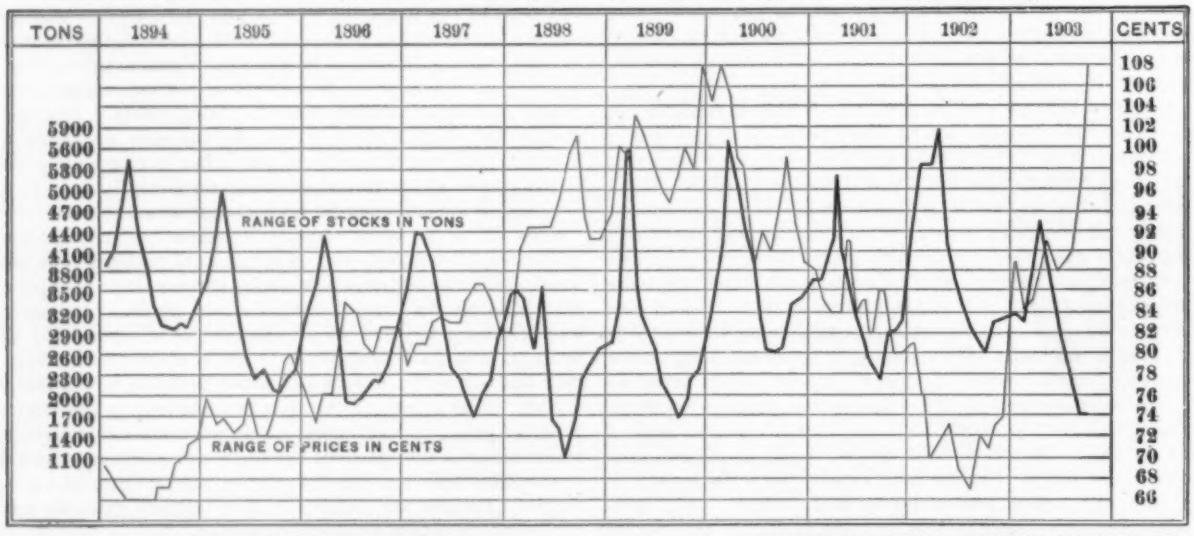
"Where the largest stocks are. If there are large holdings at Pará and limited supplies of Pará sorts elsewhere, the controlling quotations will be made in the Pará market. As between New York and Liverpool, whichever port is better supplied with a certain class of rubber than the other, to speak generally, fixes the price which the market that is short of the rubber must pay for it. Hence prices are made here or there, as conditions vary."

"Shall we have cheaper rubber soon?"

"It doesn't seem so. The 'boom' in the European industry may have passed, but it leaves the manufacture of rubber on a larger scale there than before. There may not be any great 'boom' in business in America, but indications all point to a continuation of our large rate of rubber consumption. The Pará rubber crop may be expected to show the usual small yearly rate of increase, but, judging from recent history, Africans will hardly do more than hold their own in quantity. African rubbers, by the way, are coming more and more to be sold on their merits, independently of the market for Pará grades, and some of these, with an established reputation but a decreased yield, are selling higher in consequence. There is, in addition to all these considerations, a short interest in this market so far as certain grades are concerned, and this has the effect always of stiffening prices some, but it is not attributable to what can properly be called speculation."

* * *

IN this connection it has been thought well to present the chart below, relating to conditions for ten years past, an explanation of which appears on the page following.



THE FIGURES TO THE LEFT, EXPRESSING STOCKS IN TONS, RELATE TO THE HEAVIER LINE ACROSS THE CHART.

THE FIGURES TO THE RIGHT, EXPRESSING PRICES IN CENTS, RELATE TO THE LIGHTER LINE ACROSS THE CHART.

COMPARISON OF PARA RUBBER STOCKS AND PRICES FOR TEN YEARS.

RELATION OF RUBBER STOCKS TO PRICES.

THE chart on the preceding page is designed to illustrate the correspondence between the visible supplies of rubber and prices of that material. The data upon which this chart is based are the figures appearing monthly in THE INDIA RUBBER WORLD for ten years past, showing—

1. The world's visible supply of Pará rubber (excluding Caucho), in tons.

2. The New York quotations for new Islands fine Pará rubber, in cents per pound.

It will be seen that, at the beginning of the ten years covered by the chart, rubber stocks were increasing, and prices were declining. Soon stocks began to fall off, while prices sharply advanced. The price fluctuations all the way up to the present, while not adhering closely to the rule, yet illustrate the tendency of high prices to occur at times when stocks are low. For example, see the highest prices in 1898, coincident with the lowest stocks in that year. The lowest prices for eight years were touched in 1902, in which year the stock figure reached was the highest shown in the chart. At the end of the two fluctuating lines, it will be seen that they indicate stocks far below the average, and exceptionally high prices.

The largest stocks of Par rubber will be found to accumulate in the spring months of each year, when the active Amazon "crop" period is winding up. This rubber passes from the hands of the dealers during the summer, so that the end of autumn, as a rule, shows the smallest stocks of the year, there being no large arrivals at Pará until the last three months of each year. The general relation between stocks and prices may disappear in periods when the demand for rubber is not active. Thus during the summer of 1899 there was a sharp decline in prices, although stocks were falling at the same time; the end of the same year saw prices and stocks of rubber going up the same time, indicating that an improved demand had set in.

Following is a summary of the world's rubber supplies.

THE figures below, compiled from the records of a leading European house, do not embrace stocks on the continent of Europe. Stocks of Pará on the continent are comparatively unimportant, however, and the supplies of other sorts there are chiefly at Antwerp, the full details of which market appear regularly in THE INDIA RUBBER WORLD. It is not practicable at any time to compute the amount of Africans afloat.

	May 31.	June 30.	July 31.	Aug. 31.	Sept. 30.
Para Grades:					
Stocks, Liverpool... *tons*	1645	1601	1203	800	274
Stocks, New York.....	376	383	204	200	66
Stocks, Para.....	110	129	140	105	260
Afloat	1490	1185	905	899	1260
Total.....	3621	3298	2452	2004	1860
All Other Grades:					
Stocks, Liverpool.....	377	456	367	326	386
Stocks, London	227	224	210	238	197
Stocks, New York	229	246	229	246	190
Total.....	833	926	806	810	773
Grand Total.....	4454	4224	3258	2814	2633
Same dates, 1902.	6181	5520	5022	4515	4121

It is not to be expected that any two statisticians should agree exactly in estimating stocks, and yet any differences between statements usually is more apparent than real, being due chiefly to different classifications. For example, compare the above figures for Liverpool with the table given in the market review department of this issue by Messrs. Till & Co. The showing is:

	Above Table.	Till & Co.
Para sorts. .....*tons*	274	243
Other sorts.....	386	426
Total.....	660	669

In the above table 31 tons of Caucho is embraced in "Para"; in Messrs. Till's table it is classified with "Other sorts." The point of interest is that the two houses agree to within nine tons in estimating the amount of rubber in Liverpool held, on October 1, by nineteen firms.

MADAGASCAR RUBBER IN THE ANTWERP MARKET.*

IN April last the governor general of Madagascar wrote to the president of the French chamber of commerce at Antwerp for information in respect to the commercial position of Congo and Madagascar Caoutchouc and copal gum on the Antwerp market.

M. Ed. Borniche, the president of the chamber, kindly sent information by return mail to the chief of the colony in a very interesting letter, which we give below, in response to the various questions asked which will be very useful to those in Madagascar who are concerned in the commercial exportation of Caoutchouc and copal gum. This letter emanates from M. Emile Grisar, a commission merchant whose house in Antwerp is the largest and the oldest engaged in the India-rubber trade.

"MR. PRESIDENT: I am in possession of your valued favor of May 15, containing an extract from a letter No. 283, under date of April 6, which you sent to General Galliéni, governor general of Madagascar and its dependencies, relative to the subject of the sale and conditions of Congo and Madagascar Caoutchouc in the Antwerp market. It is with true pleasure that I hereby reply to the questions of General Galliéni, and I should be very happy to see satisfactory results arise therefrom.

"We have many times received at Antwerp, Madagascar Caoutchoucs which have always been sold at good prices. I will first mention the Caoutchouc shipped from Tamatave, which comprises the best quality coming from the great island.

"This is sent us in the form of large cakes, of widely varying weights, very pure, of great consistency, containing no impurities, but having a large amount of volatile matter amounting, according to the shipments, in the neighborhood of 15 to 20 per cent. The presence of this matter, while not the cause of a large loss, is nevertheless the cause of a lower value of the merchandise, since the shipper pays the export charges on this 20 per cent., the freight, the packing, and then finally, on selling it, the buyer is subject to a considerable loss which the Caoutchouc undergoes in washing. I wouldconsequently advise that, after it has been coagulated, the larger cakes should be cut into sections, making pieces of medium size, and then dry them in the shade, and then ship them in strong cases, to protect them from breaking and prevent theft during the voyage. Present value 9.50 francs per kilogram [=83¼ cents per pound].

"The Caoutchouc sent from Majunga has the same appearance as the preceding, but sometimes contains bark and foreign particles, which the acid juice has covered in coagulating. This kind also sometimes contains some sand, and always a large amount of volatile matter amounting to 20 to 30, and some-

*Translated for THE INDIA RUBBER WORLD from the *Revue Générale Coloniale* (Brussels), September 27, 1903.

times 35 per cent. On this account, several qualities are recognized, having prices according to their degree of purity. Present price 6.75 to 7.75 francs per kilogram [=57½ to 62 cents per pound].

"Finally, Madagascar ships a quality of the lowest grade, known on the European markets under the name of East Coast Niggers. This comes in the form of medium sized balls, made up of Caoutchouc filaments rolled upon themselves. Unfortunately, the better part of these balls is only the outside film, for on taking it off we find the center to be crammed with stones and earth, which gives this gum considerable false weight (50 to 75 per cent. of foreign matter introduced with fraudulent intent). The intrinsic quality of this Caoutchouc is excellent, for were it pure, it would be worth 9.50 to 9 75 francs, but on account of the foreign matter which is enclosed it scarcely brings more than 4 to 4.50 francs. Here we see a great cause of depreciation and a remedy is urgently needed.

"On the other hand, there appears to me to be no doubt that the diminution observed in the Madagascar harvest is caused by the ravages made by the gatherers. Steps should be taken to see if the trees or plants which produce the Caoutchouc on the island are not susceptible of being reasonably tapped, so as to prevent its perishing as a result of this operation, and if so, there should be severe legislation specifying by what means, according to age and size, these plants should be tapped and by what process.

"We were a long time under the impression that in the independent Congo Free State the *lianes* (vines) could be periodically bled without their being necessarily lost; but practice shows that the natives cut the *lianes* in sections of 1 meter in length for the purpose of obtaining suitable results; the pieces being suspended, the milk runs out freely. But otherwise, when they are bled in a rational and prudent manner, the quantity of the milk is insignificant, and the *liane* dies slowly of its wound. We must necessarily conclude, that both processes are equally defective.

"The system which has been adopted is as follows: To transplant as many *lianes* as are destroyed, and even more, so as to make up for the deficit which will not fail to occur within a few years. For this purpose the legislation of the Congo state has considered it useful to reënforce certain provisions of the enactment of January 5, 1899, for the purpose of preventing the impoverishment of the Caoutchouc forests of the domain. This enactment notably prescribes that there must be annually planted in the forests of the state a number of Caoutchouc producing trees or *lianes*, calculated on a basis of 150 plants at least per ton of Caoutchouc gathered thereon during the year. A later enactment carries this up to 500 plants for each ton, dating from January 1, 1903.

"As a result of the enforcement of this law on the companies and the individuals engaged in gathering Caoutchouc, the number of plants set out in 1901 amounts to about 510,000, against 500,000 in 1900, and 410,000 for the preceding year. Besides, we may estimate the total number of Caoutchouc bearing plants planted by the state as being in the neighborhood of 2,500,000, which are a direct result of the law or as conforming to the instructions of the government which orders, independent of what has been stated, the commencement of vast plantations of Caoutchouc plants throughout the eastern territory.

"I will add that before proceeding with these replantings the state consulted with, and made inquiries through, agricultural engineers and foresters, for the purpose of determining suitable kinds which would be the best adapted for the seed plots and for slipping, and to determine under what conditions these plantations should be started, so that the chances should be the most favorable for success.

"Up to the present time very few plantations have given convincing results, and as they are a long time in coming to maturity, not producing suitable results for several years, it was thought desirable before commencing, to have fundamental principles well established, and to thoroughly study the nature of the various plants, before using them for replanting.

"The various names of Caoutchouc from the Congo, such as, Kasai, Lopori, Aruwimi, etc., relate to distinct species from which this Caoutchouc is gathered. As they are classed in the same manner according to quality, the buyers are saved considerable trouble, as they know exactly what each quality represents, and they are thus able to buy according to description and through correspondence. The observations which General Galliéni has made in respect to the necessity for the classification of Caoutchouc is very commendable.

"In effect, before the buyers can have confidence in the impartiality of the commission merchant's classification of Caoutchouc, they must in a measure be always able to buy qualities which are the same and regular, so that the delivered products all conform to the designated kinds. This system has great advantages for sellers, who can thus be assured from one day to another, of the sale of their whole output in times of over production and low prices.

"I herewith send you the sales conditions as employed at Antwerp. The method of making sales by inscription is satisfactory to everyone, in that buyers throughout the entire world are enabled to participate in these sales, since we always allow an interval of twenty days between the time of placing the product on the market, and that of making the sale.

"As there have been of late very few lots from Madagascar among the receipts, I regret my inability to send you samples of the varieties, but I shall not fail to do so on the first occasion.

"Copal Gum.—This product, which is beginning to be exported from the Congo in considerable quantities, should likewise be exported from Madagascar. Its good quality (fossil gum), hard and clear, alone merits attention; the young gums have almost no value. Before it is exported, it is desirable to have it thoroughly assorted for the purpose of taking out the defective parts, without which exportation becomes impossible, on account of their small value. This assorting should be done by agents who have a certain knowledge of the article as Copal gum possesses an infinite variety of qualities according to its degree of hardness. The value of good Copal gum varies from 200 to 275 francs per 100 kilograms.

"If any other information should be of use to the colony of Madagascar, I place myself at the entire disposition of the governor to furnish it. Yours truly, EMILE GRISAR."

IN connection with the current charges of corruption in the postoffice department at Washington, questions have been asked regarding contracts to furnish supplies, obtained by persons not manufacturers, sometimes at a lower price than the goods could be made for in the best conducted factories. A postoffice inspector, to illustrate how this might occur, without involving fraud, says: "The rubber pads used by the small offices throughout the country at that time were made in Pennsylvania by women and boys who worked for $4 and $5 a week. The New York bidders figured on paying men $12 to $15 for the work, as the union schedule provided. I don't say that is the case with all the contracts, but I know that in some of them the bidders shaved pennies."

SPECIFIC GRAVITY IN RUBBER COMPOUNDING.

THE ratio of bulk to weight is of great practical importance in the rubber industry, because it controls the number or pieces or feet per pound obtainable from any given stock. This relation of bulk to weight is dependent on the specific gravity of the material. Its determination presents a constantly recurring problem that the rubber factory superintendent must solve by some means or other if he is to work to the best advantage. The following explanation, it is hoped, will make clear to any who may be unfamiliar with the term what is meant by "specific gravity."

Every material whether solid, liquid, or gaseous has weight or density dependent on its nature or composition. These weights vary through a wide range from the very heavy solids to the lightest gases, taken bulk for bulk. *The specific gravity of any substance is the particular ratio of its weight to that of an equal bulk of another substance, taken as a standard or unit weight.* For all solids and liquids the standard substance of unit gravity is distilled water at the temperature of 62° Fahrenheit. For gases the standard is hydrogen gas at the atmospheric pressure of the sea level.

The following table gives the specific gravities of a few common substances and will be convenient for reference. It will be understood that the figures express averages and are near enough for practical purposes of technical work. The value for each substance is given in terms of water as unity:

SPECIFIC GRAVITIES OF SOME COMMON SUBSTANCES USED IN RUBBER COMPOUNDING.

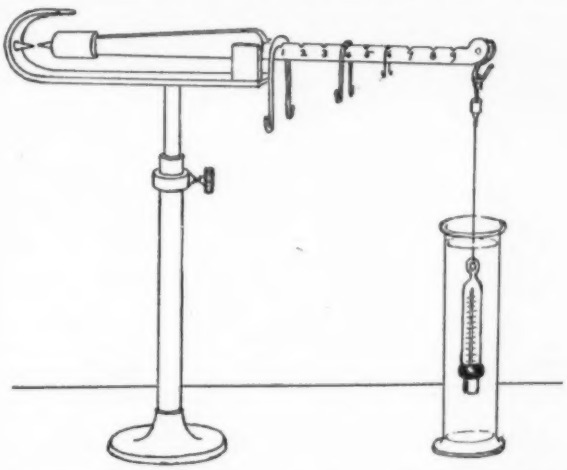
Antimony sulphide	4.6	Magnesia	3.4
Asbestine	2.6	Plaster of Paris	2.9
Asphaltum	1.3	Pumice	2.2
Barytes	4.5	Red lead	8.5
Caoutchouc	0.94	Rosin	1.1
Fossil flour	1.8	Sublimed lead	8.0
Graphite	2.0	Sulphur	2.0
Gutta-percha	0.99	Talc	2.7
Iron oxide	2.0	Tar	1.0
Kaolin	2.2	Vermilion	8.1
Lampblack	0.2	Whiting	2.8
Litharge	9.3	White lead	6.2
Lithopone	3.6	Zinc oxide	5.6

The method of determining specific gravities of solids depends on the fact that any substance immersed in water loses weight equal to the weight of the volume of water which it displaces. The means of ascertaining specific gravities vary somewhat according as the substance under examination is solid, liquid, or a gas. Only those methods will here be given that relate to solids and liquids, since they comprise the extent of the problem for rubber workers. The density of any substance bears the same proportion to the density of water as the weight of the substance bears to the weight of its bulk of water. Hence if the weight of the body, in air, is divided by its loss of weight, when weighed in water, this quotient will represent the specific gravity or comparative density of the body.

The apparatus illustrated and described in this article is designed to afford a ready means of weighing materials in air and water, thus obtaining the data for determining the specific gravity.

Every chemical balance is provided with a hook at either end of the beam for use in suspending a sample to permit its weight to be taken in water, the glass containing the water being placed on a support standing on the floor of the balance case and astride the scale pan.

The Jolly spiral balance, so called from its inventor, is especially useful for obtaining rapidly the specific gravities of minerals and rubber samples and is really indispensable in rubber works. It consists of an upright supported on a heavy iron base, which is provided with leveling screws to adjust the instrument plumb. Extending the full length of one side of this upright is a mirror upon which is engraved a fine scale of equal parts arranged decimally. Sliding on the upright is a small platform for supporting a glass of water, and adjustable at any height by a thumb screw. Sliding into the upright is a light adjustable wooden rod carrying an arm arranged for holding one end of the weighing spiral of wire which at its lower end hooks to the pans, of which there are two connected together. Three spirals of various degrees of tension are provided with the instrument to regulate its sensibility to heavy, medium, or light materials. Thus set up, as shown in the illustration, with the pans suspended from the medium spiral, allow the lower or glass pan to hang freely in a glass filled with clean water. It is proper to use distilled water, of course, as coming nearer the scientific standard. If such water is not available, clean cool



WESTPHALE'S BALANCE.

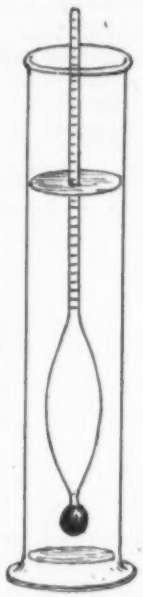
water, that has been previously boiled to expel the dissolved air, will answer very well.

To make a specific gravity determination, begin by adjusting the glass of water at such height that the lower pan will be immersed to some point above where its supporting wires meet. Allow the pans hanging free in this way to come to rest, and note the reading on the scale of the height of some fixed point, as the top of the white bead. The scale is engraved on a mirror in order that a level reading may be taken by sighting the point selected for reading with its reflection. Every reading must be made from one reference point. Record this reading taken with the pans empty. Then place in the upper pan a small piece of the rubber or other material to be tested, of suitable size (and any shape). Again adjust the level of the glass so that the pans may hang free and with the lower pan immersed as before. When equilibrium is established note the second reading of the same reference point and record. In precisely similar way determine the reading of the reference point again with the sample in the lower pan immersed. Care must be taken to free the sample of all adhering air bubbles which would otherwise falsi-

fy the reading. Note the third reading and the data will be ready for calculation. These readings represent, in terms of spaces on the scale, (1) the weight of the pans unloaded; (2) the weight of the pans and substance in air; (3) the weight of the pans and substance in water.

The difference between the first and second readings stands for the weight of the sample in air. The difference between the second and third readings represents the loss of weight of the sample in water. Divide the weight in air by the loss of weight in water and the result will express the specific gravity. For solids lighter than water it will be found necessary to close the wires of the lower pan more or less around the sample to keep it immersed.

Another and simpler instrument for obtaining specific gravities of solids is known as the Nicholson hydrometer. This is made of thin sheet metal of hydrometer form, and provided with a set of small weights. It is inexpensive and accurate, but not as convenient to use as the Jolly balance. Above and below the body of the hydrometer are pans for holding the sample. On the stem is a reference mark to which point the instrument is always sunk in the jar of water before each reading is taken. Briefly described, its use is as follows:* Let w_1 be the weight required to sink the instrument to the mark on the stem, the weight of the instrument being w; to take the specific gravity of any solid substance place a portion of it weighing less than w_1, in the upper pan, with such additional weight, say w_2, as will cause the instrument to sink to the zero mark. The weight of the substance, in air, is then $w_1 - w_2$. Next transfer the substance to the lower pan, and again adjust with weight w_4 to the zero mark. The loss of weight of the substance in water is then $w_4 - w_2$. Therefore the specific gravity is obtained by this formula:



ORDINARY HYDROMETER.

$$\text{Specific gravity} = \frac{w_1 - w_2}{w_4 - w_2}$$

For materials in the form of powder the specific gravity bottle is used. This is of various forms, but is essentially a small flask provided with a reference mark on the neck. A fine chemical balance is necessary to make the weights and the procedure is as follows for solids heavier than water:* Weigh the flask filled to the mark with water, then place the substance, of known weight, in the flask, fill to the mark with water, and weigh again. The calculation will be:

$$\text{S. G.} = \frac{\text{(Weight of substance in air)} + \text{(weight of flask and water)} - \text{(weight of flask and water and substance)}}{\text{(weight of substance in air)}}.$$

It will be unnecessary to discuss the methods employed in determining the gravities of substances soluble in water or of gases.

* From Bailey's "Chemists' Pocket Book."

Turning to the consideration of the means of obtaining the gravities of liquids such as acids, oils, naphtha, etc., we have the various forms of hydrometers and the Westphale's balance. There are many specially designed hydrometers adapted to the requirements of certain industries, but in principle they are all alike. They consist of a weighted glass bulb sinking the instrument upright in the liquid and reading the degree, or actual specific gravity, by means of graduations on the stem. The ordinary Beaumé hydrometers are those in general use. Two instruments are required, one weighted and graduated for liquids heavier than water, and one for those lighter than water. The Beaumé scale of "degrees" is arbitrary and to ascertain the specific gravities a table must be consulted. For ordinary trade purposes the Beaumé degree is used and is all that is required. The Westphale's balance is adapted to either light or heavy liquids and by its aid the gravities are read direct from the weights used without calculation. It is also convenient when only small samples of liquids are available for examination. The balance is so adjusted by the makers that the glass bob will balance the counter weight on the opposite arm when hanging in air. When suspended in any liquid a buoying effect, dependent on the gravity of the material throws the instrument out of balance. The equilibrium is reëstablished by means of a set of rider weights. Reading the position on the beam of the weights in the order of their size gives at once the specific gravity sought without calculation.

NICHOLSON HYDROMETER.

JOLLY'S SPIRAL BALANCE.

It should be noted that specific gravity is not to be taken as a test for quality as applied to rubber stocks, but should be considered simply as a guide to the economy of the stock. An other practical application is found in estimating the weight of a proposed article of solid stock when its cubical contents is known. The weight for water of the cubical contents is ascertained by multiplying by 252.5, the weight in grains of one cubic inch of water. This product multiplied by the specific gravity of any material will give the weight of the object in that material. Thus an article of 10 cubic inches volume would weigh, if made of a rubber stock of 1.85 specific gravity:

$$10 \times 252.5 \times 1.85 = 4671.25 \text{ grains} = 10\tfrac{5}{8} \text{ oz.}$$

A PETITION has been addressed to the governor general of French West Africa by the rubber trade of Bordeaux, asking that measures be taken to prevent the exhaustion of the native rubber vines of the Soudan and adjacent districts, to encourage planting, and to promote improvement of the quality of the present production. It is pointed out that the quality of the Conakry rubbers is satisfactory, and that, by the adoption of similar methods of preparation, other French colonial rubbers could be made as good. Credit is given in this regard to the action of the governor of French Guinea. The petition is signed by twenty rubber brokers, importers, experts, etc.

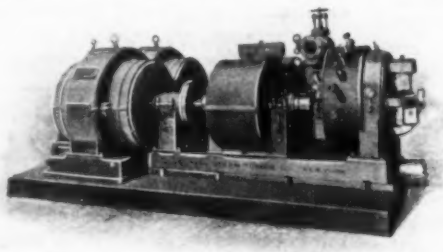
STEAM TURBINES IN THE RUBBER FACTORY.

BY HERBERT S. KIMBALL, S. B.

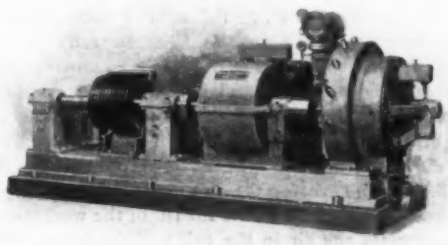
THE steam turbine is on the market, and the results of its careful design have proved so successful that one is warranted in making use of this machine. They are installed in various industrial plants, and the number of orders for such machines is astonishing.

While the problem of installing turbines in a rubber factory presents no special difficulties, yet a few cases may be of interest. It might be well to describe the principal features of the steam turbine, and though the writer is more familiar with the "De Laval" machine, he offers the following remarks, which, in general, apply to the various types.

The construction of the machine is simple—in brief, merely the turbine wheel mounted on a shaft, so constructed that the wheel may rapidly revolve around an axis through its center of gravity, rather than its geometric center. If an electric machine, the shaft is connected to the generator by a pair of gears and in case a mechanical drive is wished, an iron sheave or a pulley is substituted for the electric generator. Of course there is a case for the turbine; and other parts of the apparatus that require protection are suitably encased.



LAVAL TURBINE ALTERNATOR.



LAVAL TURBINE MOTOR.

The small space necessary, and the need of no special foundation for the turbine, alone are points that immediately attract one; and when a 300 HP. horizontal type steam turbine, mounted on a frame with the generator, requires a floor space of about 15 × 6 feet, it is readily seen how economical in floor area such a machine is, and how inexpensive the necessary foundation would be.

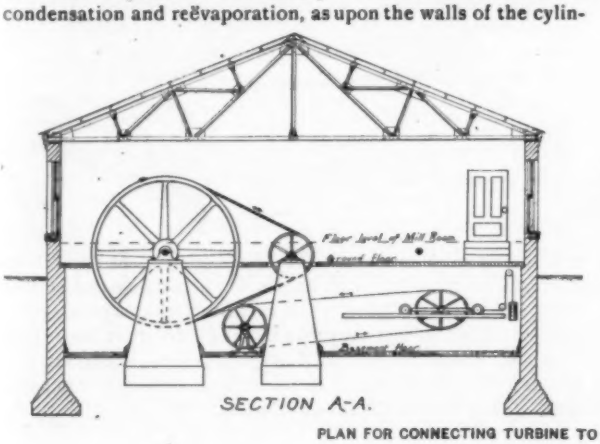
The steam turbine is radically different from the reciprocating steam engine in that, instead of using the expansive power of the steam behind a piston, the steam is expanded in a nozzle, converting the static energy into kinetic; and as the steam impinges against the wheel its great velocity is utilized to revolve the wheel at a tremendous speed.

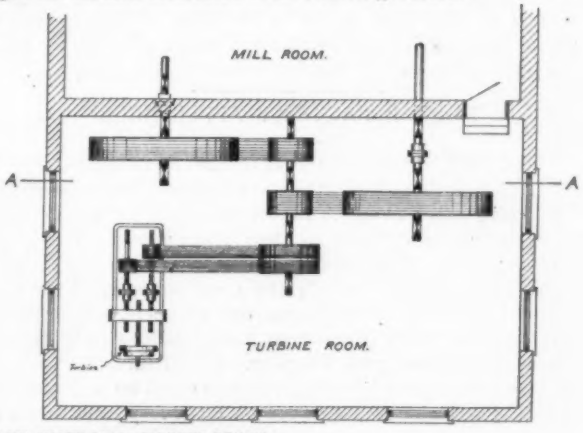
All the energy in the steam is converted into useful work in the steam turbine, which is not true in a reciprocating engine; and another point in its efficiency is the fact that there is no condensation and reëvaporation, as upon the walls of the cylinder of the reciprocating engine. It is claimed that with low pressure steam and running noncondensing that the turbine can compete with the reciprocating engine; but for the very best economy the turbine should be operated with high pressure steam and a condenser. A further gain is made by superheating the steam.

It has been proved that the turbine is more economical in its consumption of steam than is the reciprocating engine; and it should be noted that its consumption of steam does not increase to any extent per horse power, as the load decreases. Cost of fuel is an important item, and, considering that the steam turbine is such an economical machine in steam consumption, this fact alone is bound to attract attention.

The speed regulation is all that could be wished, and even with a sudden variation of load the speed will be maintained within very small limits. Oil does not have to be introduced into the machine, and consequently the steam is free from such contamination, and the condensed steam may be again used in the boilers without purification. Owing to its simple construction, it is predicted, and with good reason, that the life of the machine will be long.

In applying the steam turbine to the rubber factory, either way of furnishing power is suitable—electrically or mechanically. The generator is connected directly to the turbine, and the electric current transmitted to the electric motors on each machine, or group of machines. Should it be deemed best to transmit power by shafting, the rope sheave, which is connected to the turbine, is, by a system of rope drives, connected with the main lines of shafting, which extend from the power house out into the mill. Owing to its speed regulation, the steam turbine is well adapted to operate the crackers and mixers whose loads vary greatly and suddenly. Two accompanying illustrations show a 300 HP. turbine, with iron sheaves, and a 300 HP. turbine connected to an electric generator.





PLAN FOR CONNECTING TURBINE TO MAIN SHAFT LINES BY ROPE DRIVES.

ATTACHING WRINGER ROLLS BY MELTING.

THE old style making of wringer rolls by molding and curing the compound onto the shaft was superseded by the method of building up by hand a calendered sheet of stock on the copperized shaft, cemented and covered by a ply of hard curing rubber to insure a firm union between the iron and the body of the roll. The cure was effected by subjecting the cloth wrapped goods to open steam. This method involved considerable hand labor in building up the roll, but permitted the manufacturer to face the roll with a ply of high grade stock.

Excellent work may be made in this way, but "rolls for the million" are better made by forcing the stock from a heavy tubing machine, delivering it very close to size, or small enough to receive a facing ply, and ready to be cut in two-roll lengths. In this state the double length roll is slipped onto a short mandrel, and rolled in a wide piece of sheeting, which is drawn tightly about it in a small three-roll wrapping machine of the ordinary form. The ends of the wrapper are then tightly tied down to the mandrel, and dozens of such rolls thus prepared are placed, standing endwise, in a rack ready for curing in open heat. After this process, it remains to unwrap and remove the rolls, ready for cutting to length and sandpapering to size on a lathe. It requires some skill to force the uncut rolls onto the tightly fitting lathe mandrels. This is done by resting the mandrel on the floor with the upper end slightly entered in the roll. Then, covering the upper end of the roll tightly with one hand, a sudden downward thrust of the workman's right hand compresses the air in the roll sufficiently to permit it to slip completely onto the mandrel.

The attachment of a cured roll to the shaft is effectually accomplished as follows: The shaft is brought to dull redness its entire length and is then used to melt or burn out the hole in the roll enough to thoroughly smear both hole and iron their entire length with sticky compound. The iron is then quickly quenched in water to a heat below the melting point of the rubber. At this stage the roll is replaced on the shaft and, with a few blows of the shaft on an anvil, jarred down to place. The heat remaining in the shaft is sufficient to cure the roll so firmly to the iron that on cooling it can only be removed by cutting the rubber away. A little practice is necessary to properly judge the heat of the iron after quenching, that it may not continue melting the interior of the roll and produce a cavity or unattached spot. Such a spot would, of course, permit the roll to twist and tear in service. The layer of hard curing cement formed by melting the rubber should be as thin as possible, and the hole not enlarged beyond the size for a snug fit.

This method of attachment is adopted by leading wringer makers for new work as well as by rubber manufacturers for repair work. A few experiments will enable an ordinary mechanic to attach rolls in this way, efficiently and cheaply.

RUBBER FACTORY APPLIANCES.

CURING, STRIPPING, AND REVERSING INNER TUBES.

THE old style method of straight wrapping and cross wrapping inner tubes of rubber was used for many years in every factory devoted to their manufacture. It was at last modified by using a straight wrapper of increased dimensions, and omitting entirely the cross wrapper. This was not only a distinct saving in time and wrappers, but the tube was kept free from all markings and variations in thickness caused by irregular cross wrapping. A still further improvement is now effected by curing the tubes with no wrapping at all. The mandrels are supported on racks to prevent contact and the tubes come out perfect in every respect.

The removal of inner tubes from the mandrels on which they are cured was formerly very generally accomplished by distending the tube with a large bubble of air and forcing it slowly along the mandrel by hand pressure. The tube thus loosened from the pole slipped off readily, but required to be reversed on a rod by hand to bring outtermost the finished side. [Fig. 1.]

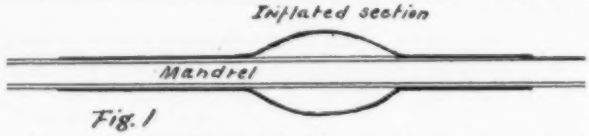


Fig. 1

A far more expeditious method for removing and reversing at one operation consists in turning back upon itself a few inches of the inner tube at one end, and under this reversed portion inserting a strong blast of air as into a pocket. The tube distends and separates from the mandrel at the point of doubling or reversing as rapidly as it can be pulled backward and off the mandrel. [See Figure 2.] Three men can remove and reverse

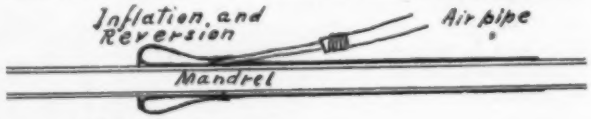


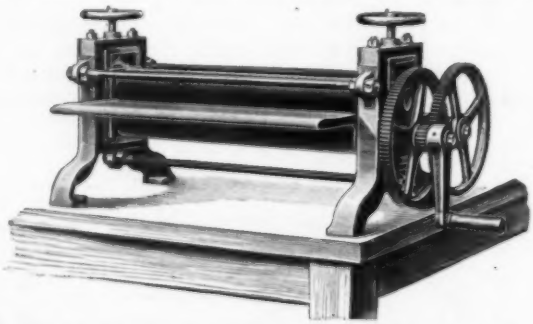
Fig. 2

3000 tubes a day by this method. One man handles the poles before removal of the tubes and one the bare poles, while the third operates the air and strips the tubes. Precisely the same method may be employed for removing and reversing sample cotton hose tubes when cured, as usual on short mandrels.

Reversing flat cured inner tubes is neatly accomplished by employing a hollow pole through which air is being exhausted. One end of the tube is slipped over the air inlet end of the pole. A partial vacuum occurs and the tube is sucked through the pole reversing as it goes. The operator releases his hold and it passes through, making way for the next.

TO IMITATE CUT SHEET.

CUT sheet, or "patent rubber," as the Continentals term it, is notable for a surface crossed by very fine lines that give it a distinctive and attractive appearance. Pure gum sheet produced by spreading in any manner does not normally possess those lines, which, by the way, are caused by the rapidly oscillating knife that shaves the sheet from the pressed block. That



calendered stock may have the appearance of cut sheet, however, the sheeting calender, shown in the accompanying illustration has been designed. It is very simple, having two graven rolls, arranged so that they may be set for different thicknesses of stock. Once through the fluting calender is enough to give the desired surface, which is permanent even after vulcanization. [Max Müller, Hannover-Hainholz, Germany.]

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE British rubber manufacturer has comparatively little business with mining companies as far as specialties in rubber goods are concerned. Valves, washers, and rubber belting of the usual types are what are supplied to metal mines by our manufacturers. As far as the belts for Frue vanners and ore conveying are concerned, our manufacturers do not seem to have entered into competition with the Americans. Yet the business must be a large one when we consider the number of vanners working at the present time. Perhaps for the benefit of some who are unfamiliar with mining machinery of the newest pattern I might explain that the Frue vanner is the modern equivalent of the old Cornish buddle, and is naturally of more interest to the rubber trade because it consists essentially of an endless rubber belt some 6 feet wide, the whole vanner being very much of the same size and appearance as an ordinary spreading machine. I am not going into the details of its use, and shall merely remark that the crushed ore falls on the slowly moving rubber belt, together with a stream of water which washes back the gangue while the heavier metallic bodies move along the belt to fall off when it reaches the turning roller at the end of the machine. At one large American mine there are 600 of these Frue vanners in work, so it will be at once seen how large the demand is. I am told that all those in present use in Great Britain are of American origin, and that recent improvements have caused them to have a much longer life than was at first the case. Rubber belts are also largely used in American mines in the hand picking of ores, and the improvements recently made by the Robins Patent Picking Belt Co. have done a great deal to prevent the erosion of the rubber by the metallic particles. It would not be of sufficient general interest to give details about these picking belts; my main object has been merely to draw the attention of British manufacturers to an important branch of the rubber trade which is at present practically monopolized by the Americans. Whether we can attack that monopoly successfully is a matter on which I am not at all inclined to express an opinion, but to those more directly concerned the issues I have touched upon might possibly be studied with advantage.

METAL MINING AND THE RUBBER TRADE.

I WAS shown the other day, a curious substance said to form a deposit of large acreage in New Zealand, and also said by my informant to be a valuable substitute for India-rubber. It could, he said, replace rubber in a mixing without the quality of the rubber being deteriorated I assured him from a cursory examination of the substance that he must be the victim of illusion. All the same the body is quite a new one to me, and it is conceivable that it might find application in the trade in its strictly limited position as an adulterant. However, I hope to be in a position later on to speak more definitely on the subject.

A NEW SUBSTITUTE.

THIS firm has recently patented a process for impregnating belting with binding material, such as Gutta-percha and Balata, by the employment of vacuum plant. The idea is by thorough impregnation of the textile material to produce an article of even greater utility than the well known belting of Dick of Glasgow. The firm of Banham is chiefly known to fame in connection with the protracted law suits with Reddaway's. The question as to whether Banham's could use the term "Camel hair" in connection with their belting occupied the various courts up to the final tribunal of the House of Lords, and the verdict was finally gained by Banham's, the judgment being that though "Camel hair belting" referred to Reddaway's product, the term "Banham's camel hair belting" was quite permissible. This judgment has been repeatedly referred to in later years in the various cases where Messrs. Reddaway have brought actions against competitors. Banham's mills, it may be stated, are situated near Messrs. Reddaway's premises.

GEORGE BANHAM & CO., LIMITED.

I UNDERSTAND that a translation of Dr. Weber's book ("The Chemistry of India-Rubber,") into French is being made by Mr. Murphy, manager for Messrs. Torrilhon et Cie., at Clermont-Ferrand, though whether the translation is for private purposes or general sale, is a point on which I have been unable to obtain definite information. A German edition of the same work is now in course of preparation by the author himself.

TECHNICAL LITERATURE.

MR. CHRISTIAN GRAY, of the Silvertown company, is the new president of this important Institution, and the members will now be in a position to hear something authoritative from the chair when any topic dealing with insulation comes up for discussion.

INSTITUTION OF ELECTRICAL ENGINEERS.

FOR the second time this year my correspondence will have to be curtailed owing to pressure of business in England and Continental travel. I am posting this from Madrid, in a tropical atmosphere, and I regret that as far as the rubber trade is concerned, I have nothing of interest to impart. I suppose it does sometimes rain in Spain, but since I have been in the country there has hardly been a cloud to temper the sun, and sunshades and fans have been met with to the entire exclusion of macintoshes and goloshes. Madrid, of course, is situated on an arid plateau, over 2000 feet above the sea, and I am far from wishing to convey the impression that the geographical surroundings are typical of the whole of the peninsula. I believe I am right in saying that there is no regular rubber works in Spain, though in the chief commercial town of Barcelona a good business is done in waterproof piece goods. These are specially exported by Manchester houses to be made up into garments at Barcelona. This form of procedure is necessitated on account of the heavy import duties levied on made up goods. Considering the weather I have experienced, I have not ventured to extol the merits of British macintoshes, but in the course of some riding troubles on the slippery mountain paths of the northern mining districts I took the opportunity of recommending the use of rubber frogpads. The horses one rides are exceptionally sure-footed, but it would be both in the interests of humanity and to the enhancement of the riders' safety if the innovation I have suggested were adopted. If this procedure is adopted on town pavements, it seems all the more desirable where a slip on the iron bound ground means going over a precipice. I may mention that rubber flooring is largely utilized in Spanish trains; I noticed the difference at once on changing trains at the frontier. To end with a generality, there is plenty of evidence that since the American war, Spain, one of the richest countries in the world from a metalliferous standpoint, is rapidly developing her commerce and the demand for mechanical rubber goods in connection with engineering and mining will undoubtedly show a great increase.

RUBBER TRADE IN SPAIN.

RECORD OF RUBBER CULTURE.

RUBBER PLANTING IN THE FAR EAST.

AN estimate of the extent of rubber planting (mainly *Hevea*) in Ceylon has been made lately by the publishers of *The Tropical Agriculturist* for their "Ceylon Handbook and Directory, 1903-04," from which the following details are derived. The acreage, by districts, is indicated by the figures in the margin herewith. The compiler believes the number of rubber trees to reach 3,500,000 or 4,000,000, of which more than half have been planted within two years. It is difficult, however, to determine the number of trees from the acreage planted, for the reason that no uniform rule exists with regard to the distance apart in planting. Besides, more than half the acreage referred to represents the planting of rubber among tea, in which case a considerably smaller number of trees per acre is set out.——For the Straits Settlements (including the Federated Malay States) *The Tropical Agriculturist*, with the assistance of data supplied by Mr. Donald Mackay, estimates a total of about 3,000,000 rubber trees, of which probably 100,000 are five years old or over. Their distribution is indicated by the marginal figures. The members of the United Planters' Association of the Federated Malay States report their total planting of rubber at 9430 acres, with 1,352,547 trees. Outside of their returns, the same difficulty exists as in the case of Ceylon in making accurate estimates of the number of trees per acre.——Mr. Cyril E. S. Baxendale, writing encouragingly of the prospects of rubber planting in the Malay states, says that there healthy Pará rubber trees at the age of 4½ years measure 35 to 40 feet in height, and as large as 33 inches in girth 3 feet from the ground.

	ACRES.
Kelani valley	4,100
Kalutura	2,357
Minor low country districts	2,708
Udagama	242
Kuruwita	219
Dumbara	360
Matale	481
All other	1,165
Total	11,630

	ACRES.	TREES.
Selangor	10,000	2,000,000
Negri Sembilan	1,500	310,000
Perak	300	50,000
Wellesley	3,000	500,000
All other	1,800	300,000
Total	16,600	3,160,000

SANTA TERESA PLANTATION CO.

[Plantation "Santa Teresa," near Tierra Blanca, canton of Soyaltepec, state of Oaxaca, Mexico. Office: Dubuque, Iowa.]

INCORPORATED August 19, 1903, under Iowa laws; capital authorized, $500,000, in $10 shares; own 2632 acres on the river Chichicasapa, near the Vera Cruz and Pacific railway; the object is to plant rubber as their ultimate principal resource, though other crops will be planted while the rubber is developing, and attention will be devoted to grazing. Officers: Henry C. Reeche, president; J. M. Fritz, secretary; W. C. S. Coy, treasurer—all business men of standing in Dubuque. The financial plan involves the sale of full paid shares from time to time, as the capital may be needed in the development work.

THE COSONEZ PLANTATION CO.

[Plantation in canton Tuxpam, state of Vera Cruz, Mexico. Office: 1028 Citizens' building, Cleveland, Ohio.]

INCORPORATED under the laws of New Jersey; capital, $200,000, in common stock. Have purchased 2000 acres, on the Cosonez river, 15 miles from the gulf coast, of which 500 acres have been cleared; some rubber, vanilla, and coffee had been planted by the former owners. The company purpose making rubber their principal interest ultimately, 1000 acres to be devoted to this production. The company expect to derive considerable rubber from wild trees still standing on their unimproved property. The company offer for sale 5 per cent. gold bonds to provide additional development capital. Henry A. Griffin is president, A. B. Marshall treasurer, George Hodges secretary, and A. B. Nichols manager—all citizens of Cleveland, Ohio.

LA ZACUALPA PLANTATION CO.

[Plantation near Tapachula, state of Chiapas, Mexico. Offices: No. 713 Market street, San Francisco, California.]

IN the preface to a recent publication by the United States department of agriculture—Mr. O. F. Cook's report on "The Culture of the Central American Rubber Tree"—it is stated: "A large proportion of the notes and illustrations used in the present paper were secured in the Soconusco district of southern Mexico on the estate of the La Zacualpa Rubber Plantation Co., through whose hospitality and numerous courtesies the work of Mr. Cook was greatly facilitated." It is understood, of course, that Mr. Cook did not attempt a complete survey of the work being done in Mexico in rubber culture, and in stopping at the La Zacualpa plantation, on his way north from Central America, his object was to reach one of the oldest plantations in Mexico, and one on which rubber had actually been produced and marketed from cultivated trees. On page 13 of his report Mr. Cook writes: "If no other evidence were obtainable, the planted trees visited in Soconusco would prove that rubber can be produced in cultivation." On page 76 he writes: "The planted trees at La Zacualpa abundantly demonstrate the practicability of rubber culture," though he adds that they do not wholly settle the question of the amount of yield, since no care was taken, by the former owners of the plantation, to record the amount of rubber actually secured from the trees. Twelve of the eighteen plates which illustrate the report are based upon photographs taken at the La Zacualpa plantation.

PLANTING "CEARA RUBBER" IN NICARAGUA.

REFERENCE has been made in earlier issues of this paper to the experiments in planting *Manihot Glaziovii* (the rubber tree of Ceará, Brazil), undertaken near La Paz, in Nicaragua. The enterprise mentioned was the plantation "La Victoria," controlled by the Messrs. Adler, of Waltham, Massachusetts. [See THE INDIA RUBBER WORLD, November 1, 1902—page 57, and December 1, 1902—page 80.] A prospectus now at hand relates to another plantation—El Trionfo—under the same management, and in the same location, also being stocked with *Manihot*, and in which outsiders are invited to become interested. A letter to THE INDIA RUBBER WORLD announces: "Our business, although not strictly private, is not of a stock selling nature, as we sell the actual land." Alfred C. Adler resides at Waltham, and George Adler and Frederick Wagner, in charge of the planting, at La Paz.

RUBBER PLANTING COMPANY PUBLICATIONS.

BOSTON Tropical Co., Boston, Massachusetts=[Prospectus]. 32 pages and map.

Santa Teresa Rubber Co., Dubuque, Iowa=Rubber, Sugar Cane, and Cattle in Tropical Mexico. 20 pages.

Mexican Mutual Planters' Co., Chicago, Illinois.=Report of the President to the Bondholders, September, 1903. 23 pages.

The Cosonez Plantation Co., Cleveland, Ohio.=[Prospectus]. 24 pages.

Mexican Gulf Commercial Co., Kansas City, Missouri.=The Dios Rios Properties, Illustrated. [A handsome album of views, including illustrations of rubber planting.] 56 pages.

THE GERMAN RUBBER WORKMAN ABROAD.

BY A WRITER IN THE "GUMMI ZEITUNG."

THIS subject has received but little attention, and therefore I desire to enter into its inner details. Not enough publicity is given to what the German rubber worker has to go through in foreign countries. How often has it occurred that German workmen, allured by dazzling wage conditions, have left their homes full of hope, and after many disappointments and much suffering have returned to Germany to commence anew. In place of their former permanent situation, which they abandoned to go abroad, they will have to take any sort of position in order to obtain employment again. But we do not mean to say that it is ill advised to take positions in foreign rubber factories at all, many workmen having made a fortune abroad. Especially the young men should take advantage of such offers and gain experience and knowledge and a broadening of their views in general by coming in contact with foreign work, peoples, and customs. But the older and married workmen, whose whole existence and that of their families depends upon a good situation, should be very careful in accepting a position abroad.

Further on I will give a few instances which I have personally observed. It is generally known that the German rubber workman is held in high favor in foreign countries, on account of his persistency, capability, and energy, but these very accomplishments lead them often to assume a rather independent attitude toward the factory management, oftentimes terminating disastrously to themselves. I could mention many cases where the workman himself was alone responsible for the failure to realize his anticipations.

Only such workmen should accept foreign positions as are thoroughly competent to manufacture the various articles independently; for instance, if a workman accepts a foreign position as hose maker, he must be positive that he is skilled in the making of the various kinds of hose, from the ordinary garden hose to those used for pressure with two or three spirals for hydraulic presses.

In many of the *smaller* factories in foreign countries it is necessary for a workman to draw his own sheets, which he never did in Germany, where every rubber factory has a competent calander master, who attends to that and also supervises the mixing machinery.

I am acquainted with several foreign rubber factories which employ at the most from 15 to 20 men, each working independently, attending to all details—a special superintendent not being employed—the owner of the factory filling that position himself, but in many instances he has no practical knowledge of the work. The workmen have to attend to all the details pertaining to the washing, mixing, and calandering machines, and produce whatever goods demanded, such as air hose, pneumatics, sheets, valves for steam pumps, bottle stoppers, brewery and water hose, etc., from A to Z, wholly by themselves. A foreign friend of mine owns a small factory of this kind, and once having large orders for pneumatics, he requested me to furnish him several skilled rubber workers. He paid good wages and I gave him the names of some able workmen, and they entered his employ. The manufacturer in question was well satisfied with their work, but at the end of the season those well paid men were discharged, and remained without employment during the whole winter, this branch of work being almost at an entire standstill.

A similar case occurred abroad a few years ago. A foreign rubber manufacturer came to Germany and engaged five competent workmen—two hose makers, one pressman, and two for pneumatics. They received high wages, but no contracts were made, and after working six months with good results two of them were discharged and the other three remaining in the factory had to submit to a material reduction in wages in order to hold their positions. The two discharged workmen had large families and appealed to the foreign trade court, which compelled the manufacturer in question to furnish transportation for them, their families, and belongings back to Germany, at his own expense. Their preference for foreign work no doubt was thoroughly cured.

Another foreign rubber factory (a stock company) engaged a German director on two months trial. This director, not being conversant with the foreign language, supplied himself with several skilled German workmen. At the end of two months he was dismissed and with him, naturally, the German workmen employed by him. Therefore I would advise every German rubber worker to be extremely careful in accepting a position abroad.

There are instances, as already mentioned, where German workmen, by means of their capability, have attained positions as foremen, enjoying permanent positions at good salaries; and, in order not to end this recital so sorrowfully, I will mention such a case. A few years ago a skilled German rubber worker accepted a position abroad, through a notice in the *Gummi-Zeitung*. He received at first 50 pfennigs [=12 cents] per hour, and now has already advanced to a monthly salary of 250 francs [=$48.25]. Such chances, of course, rarely occur, and must not be taken as a standard.

Generally, workmen are ignorant of the fact that in foreign countries no institutions for the welfare of workmen exist, such as sick benefit funds, invalid and old age insurances; and in the event of sickness overtaking them they simply earn nothing and are obliged to pay for the doctor and medicines out of their savings, that is, if they have them.

INVENTORS IN AKRON RUBBER FACTORIES.

FROM THE AKRON TIMES-DEMOCRAT.

AKRON is a great city of inventors, according to one who has been brought in touch with many of them. Not only are there native Akronians who are inventors and who are working out their own ideas here, but Akron's many great mechanical enterprises have drawn men with new ideas from many other places to exploit them here. It has become so now that every big factory has its own corps of inventors and experts, who are well paid to experiment all the time, seeking new ideas which may entail economy of production and greater profit to their employers.

Especially has this been true in the rubber factories, where machinery has come, within the past very few years, to do the work that had formerly been done by hand. The improvements that have made the Akron factories the most complete and modern in the world have also made Akron rubber manufacturers able to make lots of money in spite of the competition that has been steadily growing all these years. Not only have the professional inventors been the life of the rubber business, but they have also helped in each and every other mechanical enterprise in the city which has proved successful.

THE Amazon Telegraph Co., Limited, proposes, if permitted to raise its rates, to lay a duplicate cable between Pará and Manáos. In view of the peculiar difficulties of maintaining telegraphic service on the Amazon, frequent breakages have occurred in the existing cable, and it is hoped that with two cables a continuous service can be maintained.

RUBBER INDUSTRY IN NEW JERSEY.

FROM the three last annual reports of the bureau of statistics of labor and industries of New Jersey—the latest of which has just appeared—have been compiled the following details regarding the India-rubber industry in that state. The annual reports from this New Jersey office steadily gain in completeness, and it is believed that the returns here given cover practically the whole rubber industry of New Jersey. It will be noticed that in every respect the industry shows a growth, year by year—in the amount of capital invested, the value of materials used, wages paid, employment of labor, value of product, and so on. The points upon which the reports might be more explicit are the classification of raw material used and of the goods produced.

	1901.	1900.	1899.
Number of establishments	30	31	33
Total capital employed	$ 7,144,745	$ 7,129,582	$ 6,700,548
Total value of materials used	$ 9,522,713	$ 8,548,497	$ 8,205,344
Crude rubber	$4,258,078	$4,949,833	$4,742,778
Scrap rubber	512,403	960,854	684,352
Cotton goods	912,916	791,218	2,778,214
Compounds	1,800,110	80,565	
Other materials	2,039,206	1,760,027	
Total amount paid in wages	$ 1,961,890	$ 1,811,521	$ 1,739,918
Total selling value of products	$14,421,245	$13,239,328	$12,441,996
Boots and shoes	$1,583,385	$1,887,931	$1,904,961
Rubber tires	165,436	594,782	549,440
Reclaimed rubber	568,260	958,013	871,519
Belting and hose	7,230,289	5,649,807	9,116,036
Mechanical goods	810,150	807,415	
Druggists' goods	316,986	671,289	
Stationers' goods	364,802	376,572	
Molded goods	—	283,600	
Emery wheels	160,235	126,565	
Other goods	3,221,667	1,883,354	
Number of private firms	—	—	2
Number of partners in firms	—	—	4
Number of corporations	30	31	31
Number of shareholders in corporations	4,039	4,361	356
Number of female shareholders	75	92	75
Number of banks as shareholders	12	14	—
Average capital invested by partners	—	—	$50,000
Average invested by shareholders	$1,769	$1,655	$18,260
Average capital per factory	$238,158	$229,664	$203,047
Average materials used per factory	$317,424	$275,759	$248,644
Average products per factory	$480,708	$427,075	$377,030
Average wages paid per factory	$65,396	$59,081	$52,725
Smallest number of employés	4,151	3,628	3,619
Largest number of employés	4,550	4,310	4,296
Total average number of employés	4,322	4,015	4,034
Average number of male employés	3,570	3,307	3,312
Average number of female employés	752	708	722
Average number of employés per factory	144	130	122
Average earnings per year per employé	$453 93	$451.16	$431.31
Average number of days in operation	287.33	285.39	280.27
Average hours of work per day	9.93	9.26	9 97
Proportion of business done to capacity	82%	82.42%	81.97%

On the whole the rubber industry makes a better showing with regard to the proportion of business done to total capacity, and in regard to the extent of returns of capital, than the other industries in the state. As classified in these reports, there are eight industries having more capital invested than rubber, but only five use materials of greater value and only six report a greater value of products.

THE PREPARATION OF CRUDE RUBBER.

A LACK of uniformity in crude rubber of any given grade often serves to perplex the most experienced factory superintendent. It may be due to the different treatment, at different times, of the *latex* of the same kind of tree, or to the care or lack of care given to the rubber in storage or transportation. Perhaps, again, it may be due to the admixture of the *latex* of different species in coagulation. Bearing upon the latter view are recent comments by two widely separated observers, as follows:

Herr Ernst Ule, writing in the *Notizblatt* of the Berlin botanic gardens, in regard to rubber gathering on the river Purús, in Brazil, says: "The quality of rubber depends very much upon the mixture of the various kinds of *latex*. The *latex* of *Sapium*, for instance, is seldom collected alone, but poured into one vessel with the *latex* of *Hevea Spruceana* and that of the genuine rubber tree, *Hevea Brasiliensis*."

A writer in *Le Moniteur du Caoutchouc* (Brussels), on the rubber trees of central Africa, says: "It is not without interest, with regard to the *latex* of *Ficus*, to draw the attention of managers of trading stations to the great danger from mixing it with that of other species in coagulation. The mixing of *latex* of *Ficus* and of *lianes* (creepers) is especially disastrous. In fact, the *Ficus* product will ruin the *liane* rubber by causing an obnoxious fermentation. The organic decomposition of much African rubber has no other cause." He urges that managers of rubber camps, on finding rubber yielding trees with which they are unfamiliar, should, before mixing the product with any other, send samples of the *latex* to Europe for examination, after hermetically sealing it and adding a few drops of ammonia to prevent coagulation on the way.

Hitherto the rubber manufacturer has had to be content with buying such rubber as the market afforded, with no knowledge of how it had been prepared, and with forcing it to give the results desired. It is not impossible that in time manufacturers will be able to buy rubber fully authenticated as to the source of the *latex* from which it was prepared and the method of coagulation employed. It will then be possible for a manufacturer to order rubber specially prepared, from managers of rubber camps with an established reputation, with some assurance that the exact quality wanted will be forthcoming.

WHERE THE CATALOGUES WENT.

THE story of the capture of an imaginary business contract, in one of the South American republics, told in the New York *Evening Sun*, makes a mention of an effort to do business by sending out catalogues, which doubtless may have been duplicated in real transactions. According to the story, the United States consular agent at a certain point, calling at the office of a local dignitary, "General Badojoz," got an inkling that certain supplies would be required, and a little later the advance sheets of the United States Consular Reports gave notice of the fact.

"The same day eighty-three manufacturers wrote this consular agent that they were sending their catalogues to him under separate cover, and that their goods were without doubt the best on earth. The consular agent was requested to place this valuable data into the hands of parties interested. The long suffering consular agent paid the overdue postage, and placed the printed matter in the hands of Badojoz. Badojoz placed it in his waste paper baskets. His janitress rescued it and placed it in the hands of her brother, who kept the little butter shop. Her brother wrapped up his butter in it and placed it in the hands of his customers, who admired the magnificent glazed paper and wondered what the dickens the printing was all about. Badojoz's janitress's brother's customers thus became the parties interested."

The above writer omits to state that the catalogues, being in English, had no meaning for those who received them.

NEW GOODS AND SPECIALTIES IN RUBBER.

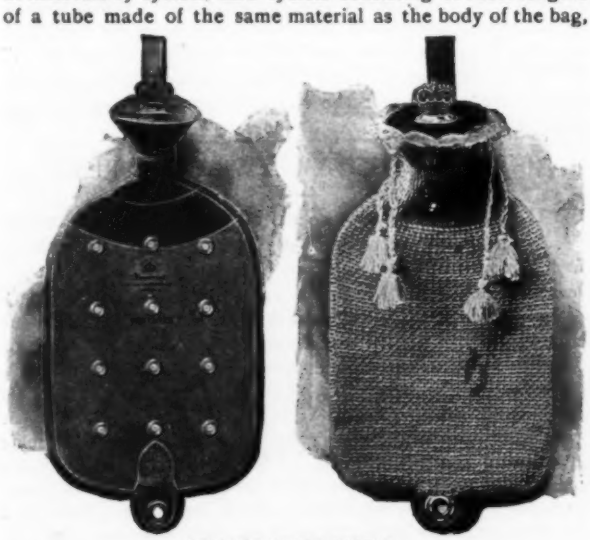
THE U. S. A. LIQUID PISTOL.

THIS is really the liquid pistol first introduced to the public under the name "Son of a Gun," but so improved that its predecessor has now been withdrawn from the market. In the "U. S. A." pistol the reservoir is an oval bulb of rubber that fills the hollow in the pistol handle. Connected with the trigger is a spoon valve that does all of the firing and recharging. The same principle was involved in the pistol as formerly made, but the bulb was then exposed to wear and tear, whereas it is now fully covered and protected by the metal handle. In its present form the pistol should last a life time, as there is nothing to get out of order. For pedestrian, bicyclist, or automobilist it is a first class discourager to dogs or tramps, even if loaded with water only, but if the charge be diluted ammonia or tincture of red pepper it is remarkably effective. The capacity of the pistol is twenty charges without refilling. It is five inches long, finished in nickel. [Parker, Stearns & Sutton, No. 222 South street, New York.]

U. S. A. LIQUID PISTOL.

A NEW HOT WATER BOTTLE.

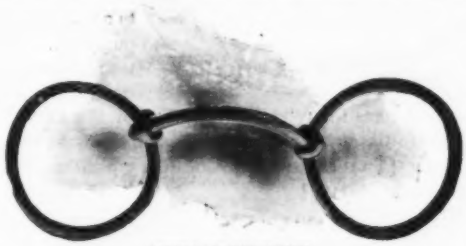
A SPECIAL feature of the hot water bottle illustrated on this page is the even distribution of its contents, due to the novel form of construction. The side walls of this bottle are united at intervals by eyelets, said eyelets consisting of short lengths of a tube made of the same material as the body of the bag, with the edges of the eyelet or tube rounded over and adherent to the side walls and arranged to unite therewith during the process of vulcanization. One of the accompanying cuts shows the hot water bottle with a knit cover and another the bottle without the cover. The article has recently been patented and is understood to have met an encouraging reception in the trade. [The Goodyear Tire and Rubber Co., Akron, Ohio.]



NEW HOT WATER BOTTLE.

THE ACHILLES EXERCISER.

THE new article herewith illustrated is made of rubber alone and combines simplicity, durability, noiselessness, and convenience. When folded up it takes up about as much space, in the words of its inventor, as an apple. It can be packed conveniently into any grip, and can be used anywhere and at any time. There are no wires involved in its construction, no pulleys to put up, no screws or hooks to deface walls or furniture. Moreover, it is a practical device. It is adaptable for a long list of exercises, admitting the arms or the feet through the rings, while the middle connection will stretch to any desirable length. The inventor is Mr. Franklin C. Holmes, of Los Angeles, California, and patents have been applied for. [The Goodyear Tire and Rubber Co., Akron, Ohio].



ACHILLAS EXERCISER.

THE HICKS DRESS SHIELD.

THE illustration represents the trademark adopted for a new pure gum dress shield made by the Canfield Rubber Co. (Bridgepert, Connecticut) and named for the president of that company, the Hon. Ratcliffe Hicks. These shields are made by a new process patented in the United States and Europe, and have withstood successfully severe tests under various temperatures and degrees of moistures. They are not only light in weight but durable and odorless, and can be washed and ironed with a hot iron.

THE RUBBER FACE MASK.

IT has been the general belief that a face mask of India-rubber was something that was sold chiefly to ladies who desired to enhance whatever beauties of complexion nature had favored them with. It seems, however, that this is far from the truth. The rubber mask is used to-day by expert dermatologists in removing the pittings of smallpox, in the following manner: The face is first antiseptically cleaned. Then a lotion made from bichloride of mercury, carbolic acid, glacial acetic acid, or corrosive sublimate, is rubbed into the skin thoroughly. The patient is then sent home to rest until the next day. The following day shows the face red, inflamed, and blistered. A second lotion is then applied, and the face then covered with a rubber mask. The patient is afterward kept in retirement for from six to twelve days. During this period suppuration goes on, the old skin is wholly destroyed, and a new skin revealed—pink, soft, and smooth. Further than this, it is claimed that in ordinary use the toilet face mask, made of

RUBBER FACE MASK.

fine pure rubber, and conforming easily to the features, will remove tan, freckles, sallowness, redness, discolorations, and the like. [The Canton Rubber Co., Canton, Ohio.]

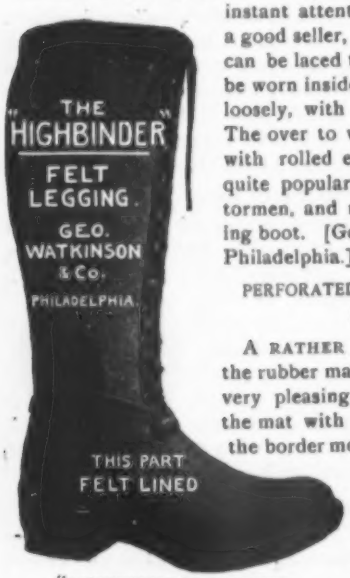
AUTOMOBILE TIRES WITH "FRICTION PLUG."

VARIOUS applications of the Foster "friction plug" have been illustrated in these pages, and there is now to be added the use of this principle in rendering automobile tires non-slipping. Besides, the use of the friction plug renders the tire less liable to puncture. The friction plugs are placed on the outer surface of the tire about ½ inch apart, and are raised slightly so as to take the wear from the rubber. [The Elastic Tip Co., No. 370 Atlantic avenue, Boston, Massachusetts.]

AUTOMOBILE TIRES WITH "FRICTION PLUG."

THE "HIGHBINDER" FELT LEGGING.

A FELT boot that is new in very many respects, that attracts instant attention, and that is already a good seller, is the "Highbinder." It can be laced tightly to the leg so as to be worn inside of the trousers, or more loosely, with the trousers leg inside. The over to which it is fitted is duck, with rolled edge and tap sole. It is quite popular among farmers and motormen, and makes an excellent hunting boot. [George Watkinson & Co., Philadelphia.]



"HIGHBINDER" FELT LEGGING.

PERFORATED MATS WITH MOLDED BORDERS.

A RATHER unusual combination in the rubber mat line, but one in which very pleasing effects are obtained, is the mat with a perforated center and the border molded. Of course the perforated portion can be made in any of the usual designs, while the border may be in black, white, or red. Made in three sizes — 18 × 31, 18 × 36, and 20 × 40 inches. [Perfection Rubber Co.—John J. Cook, No. 923 South Clinton avenue, Trenton, New Jersey.]

THE SHERMAN HOSE COUPLING.

HOSE coupled as in the illustration herewith has withstood a water test of over 600 pounds without leaking. The Sherman coupling, being made from sheet brass, is free from sandholes and such like defects. The double knurled flanges on the nut afford a fine grip for the hand, full waterway, and deep corrugations for imbedding into the lining of the hose. Other advantages are that there are no soldered joints and all the parts are seamless. In addition to the marking "Sherman Coupling," this device is also labeled "Licensed under Benedict & Burnham patents." [H. B. Sherman Manufacturing Co., Battle Creek, Michigan.]

SHERMAN HOSE COUPLING.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of August, 1903, and for the first eight months of the calendar year, for five years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
August, 1903.....	$ 94,113	$166,105	$ 195.442	$ 455,660
January-July.....	474,684	341,792	1,459.954	2,276,430
Total, 1903.....	$568,797	$507,897	$1,655,396	$2,732,090
Total, 1902.....	459,871	524,629	1,298,132	2,282,652
Total, 1901.....	398,917	394,397	1,203,086	1,996,310
Total, 1900.....	359,840	350,286	1,000,839	1,710,965
Total, 1889 (*a*)..	110,604	169,688	1,024,206	1,304,498

(*a*) Included in "All Other" prior to July 1, 1899.

Exports of reclaimed rubber for the first eight months of 1903 amounted in value to $287,564, against $254,375 for the same period in 1902, and $239,246 in 1901.

RUBBER SHOES IN CHINA.

A REPORT by the British acting consul at Wuchow says: "The import of rubber boots and shoes increased last year by 2,000 pairs; the favorite make is marked as being of Scotch origin, but it is more than probable that this shoe, as well as a *soidisant* Russian boot, comes from Japan. Current retail price: boots, 3*s.* 6*d.* per pair; shoes, 3*s.* per pair. These boots and shoes are of native pattern, but they would be more acceptable if the soles were made at least ¼ in. thick, similar to the ordinary Chinese shoe. The native does not wear these articles as goloshes over his own shoes, but instead of them, and hence a light India-rubber sole does not afford sufficient protection to the foot in a country where there are no roads and street pavements consist principally of broken brick and stone."

—With all respect to the official quoted above, it is extremely improbable that the rubber footwear he mentions was made in Japan.

CHARLES GOODYEAR TWICE SURPRISED.

THE discovery of the process of vulcanizing India-rubber was recently attributed, by the Waterbury (Connecticut) *Republican*, in an article quoted in these pages, to Mr. Goodyear's accidental throwing of a handful of sulpher into "a cup of melted rubber." But perhaps the able Newburyport (Massachusetts) *News* knows more about the matter. Writing of Charles Goodyear's experiments the *News* says:

Luck helped him twice. Once, when painting a picture, a bit of his sulphuric acid fell on crude rubber, and he was surprised to notice that it hardened the rubber. A few years later, while telling about rubber in a Woburn grocery store, a bit of it fell on the hot stove, and it vulcanized. Goodyear was amazed to discover the keynote of the process he had so long sought, and he went madly at work again. To carry on his vulcanizing experiments, he used his wife's cook stove oven, after his wife had baked bread, and the boilers of manufacturers, after the workingmen had gone home.

The whole thing is plain now. At one time he found that sulphuric acid hardened rubber; several years later he found that dropping a rubber on a hot stove hardened rubber. He had only to put one and one together—and he had vulcanization. It must have been "luck" that enabled our contemporary to know so much.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED SEPTEMBER 1, 1903.

NO. 737,695. Soft tread horseshoe. C. H. Beardsley, Fremont, Ohio, assignor of one half to C. Gibson and W. D. Totten, Detroit, Michigan.

737,697. Collapsible tube for fountain pens. W. Bolles, assignor of one half to J. L. Chase, both of Toledo, Ohio.

737,698. Golf ball [with core composed of elastic thread or bands wound under tension]. C. E. Boutwood, Hinsdale, Illinois.

737,702. Tire [solid rubber, for vehicles; with base and tread portions of differing degrees of compressibility]. E. B. Cadwell, New York city.

737,745. Felly for vehicle wheels [with which is connected a pneumatic tire and means for retaining the same]. R. Kronenburg, Ohligs, Germany.

737,751. Fabric [comprising a plurality of layers of pliable vulcanized material containing fire resisting ingredients in a portion of said layers, said layers being of varying degrees of hardness]. Amanda M. Lougee, Boston, Massachusetts.

737,773. Playing ball. F. H. Richards, Hartford, Connecticut.

737,774. Playing ball. *Same.*

737,795. Syringe pipe. V. C. V. Wood, New York city.

737,816. Elastic tire for vehicles. W. Balassa, Vienna, Austria.

737,845. Horseshoe [with elastic tread]. E. H. Jackson, Colvinrun, Virginia.

738,009. Medicine applicator [with collapsible retainer]. H. N. Dews, Portsmouth, Virginia.

738,064. Vehicle tire [pneumatic, of the clincher type]. Adolf Prinzhorn, of the Continental Caoutchouc- und Guttapercha-Co., Hanover, Germany.

ISSUED SEPTEMBER 8, 1903.

738,175. Girdle for supporting garments. Lillian Fagan, Columbia Falls, Montana.

738,235. Smoking pipe [with corn cob bowl and a stem of rubber tubing]. I. Pfortner and G. A. Pfortner, New York city.

738,250. Flexible tubular covering. J. Stanley, Newark, New Jersey.

738,544. Hotwater bottle. F. H. Jones, Wakefield, Massachusetts, assignor to Tyer Rubber Co.

738,566. Vehicle tire and method of manufacturing same. C. B. Nirdlinger, St. Louis, Missouri.

738,593. Auriphone [being a mouthpiece and an earpiece connected by a flexible tube]. L. M. Atkinson, Rockport, Indiana.

738,603. Syringe nozzle. H. Brown, London, England.

738,639. Cushion tread horseshoe. A. A. Spadone, New York city.

Trade Mark.

41,074. Rubber heels for boots and shoes. P. W. Miner & Son, Batavia, New York. *Essential feature*—"Treadeasy." Used since February, 1896.

ISSUED SEPTEMBER 15, 1903.

738,839. Fountain pen for recording machines. O. C. Patton, Denver, Colorado.

738,859. Fountain pen filling device. H. Taylor, St. Paul, Minnesota.

738,876. Fountain pen. J. Barnes, assignor to W. F. & John Barnes Co., both of Rockford, Illinois.

739,025. Inner tube for pneumatic tires. T. R. Palmer, Jeannette, Pennsylvania.

739,053. Vehicle wheel [including flexible tire]. L. Biava, New York city.

739,097. Hose or tubing. F. M. Marcy, Worcester, assignor of one half to G. O. Draper, Hopeville, Massachusetts.

Design Patent.

36,558. Tiling. R. L. Chipman, Akron, Ohio. Term of patent 14 years.

ISSUED SEPTEMBER 22, 1903.

739,658. Vehicle wheel [with rubber cushion tire.] G. D. Dryden, Chicago, Ill.

739,720. Fountain pen. J. G. Rider, Rockford, Illinois.

739,753. Playing ball [comprising a springy hollow core, a hard shell of plastic material, an intervening layer of soft rubber, and a metal layer embedded in said soft rubber layer, all enclosed in a shell of Gutta-percha]. E. Kempshall, Boston, Massachusetts.

ISSUED SEPTEMBER 29, 1903.

739,826. Antiskidding device for vehicle wheels. S. Butler, Westbury-on-Tyrm, England.

740,069. Vehicle tire. W. O. Worth, Chicago, Illinois.

740,142. Heel for boots or shoes. J. C. Hale, Alexandria, Scotland, assignor to R. M. Howison, London.

740,148. Horseshoe pad [consisting of layers of fibrous material cemented together by a waterproof material]. A. Larsen, Chicago, Illinois.

740,184. Antiskidding device for vehicle wheels. W. D. Sainsbury, Dublin, Ireland.

740,278. Rocking chair attachment [a rubber strip for the under side of the rocker]. W. E. Howe, Talladega, Alabama.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD offices at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

[* *Denotes Applications from the United States.*]

APPLICATIONS—1903.

18,244. Constance Campione, London. Dress shield. Aug. 24.

18,249. G. Sutton, London. Means for molding hollow objects in plastic material (E. J. LeComte, Mexico). Aug. 24.

18,365. J. S. Fairfax, London. Elastic air pressure balls (S. A. Tidey, Switzerland). Aug. 25.

18,385. P. A. Martin, Birmingham. Means of manufacture of golf balls. Aug. 26.

18,483. W. R. Amos, London. Hose coupling. Aug. 27.

18,635. J. W. R. Scriven, Bradford. Pneumatic tire cover. Aug. 29.

18,636. W. Buttery, Bradford. Tire for cycles and motors. Aug. 29.

18,664. R. J. Routledge, London. Tire for motor cycles and motors. Aug. 29.

18,671. W. H. Chapman, London. Puncture preventing device for tires. Aug. 29.

*18,716. A. A. Waterman, London. Fountain pen. Aug. 31.

18,770. C. E. Boutwood, London. Golf ball. Aug. 31.

18,845. H. C. Berger, London. Resilient protective covering for pneumatic tires. Sept. 1.

18,876. D. P. Goodwin, Birmingham. Tire for motor and other vehicles. Sept. 1.

18,937. W. R. Ormandy, Liverpool. Method of manufacture of rubber tires for vehicles. Sept. 2.

18,996. E. W. Warriner, London. Fountain pen. Sept. 3.

19,001. J. S. Campbell and A. H. Atteridge, London. Golf ball. Sept. 3.

19,062. W. R. Cornell, Black Bourton, Oxon. Life belt. Sept. 4.

19,091. T. J. Cooper and J. D. Smith, London. Pneumatic tire. Sept. 4.

19,100. I. E. Winslow and W. P. Pearsall, London. Resilient wheel for vehicles. Sept. 4.

19,148. V. Pappenheim, London. Syringe. Sept. 5.

19,149. V. Pappenheim, London. Spraying bottle. Sept. 5.

19,159. G. R. Venner and F. W. Trash, London. Pneumatic tire for cycles and motors. Sept. 5.

19,162. W. F. Williams, London. Elastic tire. Sept. 5.

19,192. Carl Otto Weber, Crumpsall. Improvements in the utilization of low grades of India-rubber and Gutta-percha and their resinous constituents. Sept. 7.

19,230. W. Barber and F. Johnson, London. Revolving heel pad. Sept. 7.

19,295. C. Bissell and W. Bradshaw, Manchester. Pneumatic tire and rim for cycles and motor cars. Sept. 8.

19,299. P. A. Martin and B. A. Martin, Birmingham. Tire for vehicle wheels. Sept. 8.

19,325. H. F. Hills, London. Puncture resisting device for tires. Sept. 8.

19,346. J. Griffiths, London. Adjustable heel pad. Sept. 8.

19,413. H. Metzger, Manchester. Inflatable toy. Sept. 9.

19,429. E. S. Woolf, Liverpool. Antislipping device for pneumatic tires. Sept. 9.

19,450. Anna Wesp, London. Seamless dress shield and method of manufacture. Sept. 9.

19,455. M. McNally, London. Cap for closing severed ends of tire inner tubes. Sept. 9.

19,565. J. Monk, Manchester. Pneumatic tire. Sept. 11.

19,569. L. Mistovski, Manchester. Improved seam for waterproof garments. Sept. 11.

19,570. Isidor Frankenburg, Limited, and W. Hubbard, Manchester. Heel pad. Sept. 11.

19,608. A. Evans, London. Pneumatic tire. Sept. 11.

19,635. L. D. Tandy and R. H. Smith, London. Fittings for pneumatic and other elastic tires. Sept. 11.

19,747. S. Johnson, London. Boot heels and soles and method of attaching same. Sept. 14.

19,809. T. C. Redfern, Manchester. Detachable heels for boots. Sept. 15.

19,884. H. Panzetta and H. H. Frost, London. Vulcanizing apparatus. Sept. 15.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 19, 1903.]

8,881 (1902). Means of preventing punctures in pneumatic tires. R. M. Howison, London.

*8,893 (1902). Syringe nozzle. W. L. Wise, London. (W. H. Pumphrey, New York.)

8,980 (1902). Elastic tire [consisting of a series of springs enclosed in a cover of rubber or other material]. C. A. Brandt and A. Förnelius, Sandviken, Sweden.

*8,982 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

*8,983 (1902). Golf ball. *Same.*

*8,984 (1902). Golf ball. *Same.*

*8,985 (1902). Golf ball. *Same.*

9,133 (1902). Gauntlets [with elastic closely fitting wrist part]. A. Dunhill, London.

9,137 (1902). Inhaler. S. R. Hatch, Bristol.

9,171 (1902). Pneumatic tire [with tread compounded of rubber, metal, etc.] G. G. Smith, Madgeburg, Germany.

9,202 (1902). Air or water cushion for use in baths. E. Rose, Neurode, Germany.

*9,240 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

*9,241 (1902). Golf ball. *Same.*

*9,242 (1902). Golf ball. *Same.*

*9,243 (1902). Playing ball. *Same.*

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 19, 1903.]

*9,511 (1902). Insulating composition. L. Randolph, Newark, New Jersey.

9,539 (1902). Elastic tire [composed of a series of springs with intermediate spaces filled with rubber]. F. S. de Mondran and E. B. Gras, Paris, France.

9,552 (1902). Hernia truss. F. Matuchet, Paris, France.

9,625 (1902). Vulcanization of India-rubber [the articles being placed in vessels heated by steam pipes and connected with a pump for circulating air or other gas]. W. W. Wittenberg, E. Brock, and E. Koch, Riga, Russia.

9,650 (1902). Cement for repairing tires [a solution of Gutta-percha in carbon bisulphide with mineral naphtha]. E. Blumdell, Wem, Shropshire.

9,698 (1902). Valve for foot balls or pneumatic tires. F. W. Ingram (J. G. Ingram & Sons), London.

9,771 (1902). Ear trumpet. T. W. Messenger. Quorn, South Australia.

9,804 (1902). Vulcanizing mold for wheel tires and the like. E. Bert, Paris, France.

9,805 (1902). Method of molding or vulcanizing wheel tires and the like. *Same.*

*9,859 (1902). Tool for stripping insulation from wire. C. C. Sibley, Perth Amboy, New Jersey.

9,945 (1902). Elastic tire [of springs enclosed in a rubber cover]. L. Henss, Wiesbaden, Germany.

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 26, 1903.]

10,218 (1902). Plastic composition [for insulation work or as a substitute for celluloid]. A. Luft, Lemberg, Austria.

10,240 (1902). Collapsible and folding bath. E. W. Lancaster, London.

10,349 (1902). Toy balloon. A. J. Boult, London. (S. A. pour le Commerce et l'Industrie du Caoutchouc, Brussels.)

*10,398 (1902). Elastic tire [with cork core]. H. Barnard, Hamilton, Ontario.

10,406 (1902). Sole and heel protector for boots. J. S. Howkins, Thornton Heath, and J. Weaver, London.

10,421 (1902). Nipple for feeding bottles. W. G. Plucknett, Bristol.

*10,453 (1902). Method of making balls. E. Kempshall, Boston, Massachusetts.

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 2, 1903.]

10,660 (1902). Elastic tire. R. C. Sayer, Bristol.

*10,704 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

*10,707 (1902). Vehicle wheel [having pneumatic tube or rubber section between inner and outer members]. D. H. Hayward, No. 131 West One Hundred and Third street, New York.

10,921 (1902). Hose pipe [combined suction and pressure]. P. MacLellan, Glasgow, and J. W. O. Walker, Birmingham.

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 9, 1903.]

*11,318 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

*11,321 (1902). Vehicle tire [solid, wired on, with elastic rubber tread and hard rubber base molded in one helically coiled length]. W. S. Huffman, Brookline, Massachusetts.

*11,507 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

*11,605 (1902). Playing ball. F. H. Richards, Hartford, Connecticut.

*11,606 (1902). Golf ball. *Same.*

*11,607 (1902). Golf ball. *Same.*

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 16, 1903.]

*11,752 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

*11,753 (1902). Golf ball. *Same.*

*11,754 (1902). Golf ball. *Same.*

11,801 (1902). Golf ball. R. Hutchison, Prestwick, Ayrshire.

11,857 (1902). Pneumatic tire. M. Polack, Waltershausen, Germany.

11,895 (1902). Flexible tubing [of rubber or other material with internal and external spiral coils]. W. M. Angus and A. Robertson, Newcastle-on-Tyne.

11,981 (1902). Pneumatic tire [with locking rings for securing the covers]. J. Cottrell, Surrey, and A. M. Smith, London.

*11,996 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

*12,013 (1902). Vaginal syringe. R. H. Eddy, Providence, Rhode Island.

12,065 (1902). Pneumatic tire [with non-slipping projections]. F. Thorpe, Newmarket Station, Ireland.

12,143 (1902). Eye cupping and massage apparatus. J. Williams, Birkenhead.

THE GERMAN PATENT RECORD.

PATENTS GRANTED.

145,248 (Class 39*a*). Process and appliance for vulcanizing rubber goods. B. W. Wittenberg, E. Brock, and E. Koch, Riga, Russia. Sept. 2.

144,153 (Cl. 71*a*). Rubber shoe. C. P. Böhnke, Riga, Russia. Sept. 2.

145,524 (Cl. 63*e*). Air tire with tread fortified by ribs. J. F. Lober, Pittsburgh, Pennsylvania, United States. Sept. 9.

145,525 (Cl. 63*e*). Pneumatic rubber tire having hollow side spaces provided with solid cores. W. F. Williams, London, England. Sept. 9.

145,527 (Cl. 63*e*). Tire with depressions in the sides, adapted to heavy vehicles. W. O. Worth, Chicago, Illinois, United States. Sept. 9.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

205,997 (Class 4*a*). Gas bag for acetylene lanterns, attached to the pipe system by rubber tube. Oberrheimsche Metallwerke, G. m. b. H. Sept. 2.

206,004 (Cl. 4*a*). Rubber insert for wagon lamp holders. U. Stransky, Prague, Austria. Sept. 2.

206,490 (Cl. 8 *d*). Wringer rollers, consisting of rubber rings which may be changed when worn. M. Schreiber, Krefeld. Sept. 9.

206,773 (Cl. 63*e*). Rubber rims for wagon wheels. B. Panzer, Berlin. Sept. 9.

206,675 (Cl. 71*a*). Mode of fastening rubber heels. M. Gühne, Strassburg. Sept. 9.

207,398 (Cl. 64*c*). Rubber emptying plug, for drawing off tubes, with side valve to admit the air, adapted to casks with iron bungholes. M. Lind, Mannheim-Neckerau. Sept. 16.

206,373 (Cl. 71*a*). Elastic insoles, having rubber tubing on the underside. O. Dietrich, Halle a/d Saale. Sept. 16.

207,657 (Cl. 12*d*). Centrifugal drum covered first with hard rubber and then outside with soft rubber. Vereinigte Berlin-Frankfurter Gummiwaaren-Fabriken, Gelnhausen. Sept. 23.

217,828 (Cl. 63*e*). Tires with air tube spirally wound and ends fastened with cement. Aug. C. Könnecker, Hamburg. Sept. 23.

217,721 (Cl. 70*e*). Eraser having different colored squares, giving the appearance of a checkerboard. F. Marx & Co., Hannover. Sept. 23.

NEWS OF THE AMERICAN RUBBER TRADE.

THE FISK RUBBER CO. ASSIGN.

THE following statement was issued on October 15:

The Fisk Rubber Co. has made an assignment to A. N. Mayo, of Springfield [Massachusetts], for the purpose of reorganization and increase of capital stock. The business will be continued without interruption. The assets are in excess of the liabilities, and it is expected that all indebtedness will be paid in full.

James B. Carroll, a lawyer of Springfield, has been retained by the creditors, who, at last accounts, were understood to be favorable to some plan of reorganization that would permit of the business to be continued, with a larger capital than hitherto. The Fisk Rubber Co. were incorporated in the latter part of 1898, to acquire the plant of the Spalding & Pepper Manufacturing Co. (Chicopee Falls, Mass.), in liquidation. The company have been engaged in the manufacture of bicycle and vehicle tires, apparently doing a good business, though the capital has never been increased beyond the original figure, $33,000. THE INDIA RUBBER WORLD was informed recently that an offer had been made for the Fisk factory by Colonel Albert A. Pope, head of the Pope Manufacturing Co. The Springfield *Republican* states: "A rumor was circulated a few days ago that it [the Fisk company] was on the point of selling out to the Pope company of Hartford, and it is a fact that a short time ago the Pope company made an offer, but it was not considered."

SHELTON RUBBER RECLAIMING PLANT CLOSED.

THE U. S. Rubber Reclaiming Works, having erected at Buffalo, New York, the largest rubber reclaiming plant in existence, have closed for an indefinite period their original plant at Shelton, Connecticut, though the latter will not be dismantled, at least for the present. The Shelton plant dates from 1889, in January of which year the Derby Rubber Co. was incorporated, with $20,000 capital, by V. A. Page, W. F. Askam, and Robert N., Royal M., and Theodore S. Bassett. The Derby Rubber Co. joined with four other concerns, in forming the Rubber Reclaiming Co., which controlled the trade from May 9, 1891, to June 1, 1895. After the dissolution of the combination the Shelton plant was continued by a new company, the U. S. Rubber Reclaiming Works, with which was merged, in 1900, the Loewenthal Rubber Co., of Jersey City, New Jersey. Theodore S. Bassett, named above, has been identified with the business continuously, being now president of the U. S. Rubber Reclaiming Works, while W. F. Askam, whose knowledge of reclaiming processes was the basis of the original Shelton undertaking, is at Buffalo, as general superintendent.

THE POPE MANUFACTURING CO.

THE details of the acquisition of the American Bicycle Co. and its constituent companies by the new corporation headed by Colonel Albert A. Pope have been given from time to time in these columns. On October 14, all the necessary legal preliminaries having been arranged, orders were given that all business would be transacted in future in the name of the Pope Manufacturing Co., the names "American Bicycle Co." and "American Cycle Manufacturing Co." disappearing. There are factories at Hartford, Connecticut; Westfield, Massachusetts; Hagerstown, Maryland; and Chicago, Illinois. Offices and branches are maintained in New York, Boston, Providence, Philadelphia, Washington, and San Francisco.——Early in the month Colonel Pope was invited to address the Hartford Workingmen's Club, which he did, recounting the history of the first Pope Manufacturing Co., incorporated in 1877, with only $3300 capital. A handsome floral horseshoe was presented to Colonel Pope by the members of the club.

AMERICAN TUBING AND WEBBING CO.

LORIN M. COOK and Willard C. Perkins, receivers for this company (at Providence, Rhode Island) since March 14, 1903, have applied to the Rhode Island supreme court for leave to iquidate the property, and a hearing has been set for the motion on November 2. Mr. Perkins informed THE INDIA RUBBER WORLD correspondent a few days since that there was no doubt that the property would eventually be sold, but that he could tell nothing definite until after the hearing. Meanwhile, the plant was running on full time and will probably continue to do so until some disposition has been made of the property, but ever since the concern went into the hands of receivers the working force has gradually been diminishing. The claims of creditors are understood to amount to about $300,000. The embarrassment of the company grew out of the failure of Dresser & Co. (New York), details of which were given in THE INDIA RUBBER WORLD April 1, 1903 (page 239) and July 1 (page 354).

WHY THEIR TIRES ARE HIGHER IN PRICE.

THE Consolidated Rubber Tire Co. (New York and Akron, Ohio) have circulated in their trade a chart illustrating the advance in crude rubber prices, with the following explanatory paragraph: "The above chart gives the New York market price per pound of Pará rubber for the past fifteen months as reported by THE INDIA RUBBER WORLD. This advance in price alone is sufficient reason for the advance in price of Kelly-Springfield tires, and further comment is unnecessary."

A NEW LAST COMPANY IN CANADA.

THE Standard Last Co. of Granby, Quebec, has been organized lately, for the purpose of combining two plants already existing. One is that of the old Granby Last Co., which went into liquidation last summer. The other plant acquired comprises the last making machinery and stock of blocks of the Canadian Rubber Co. of Montreal. A fine equipment has thus been secured. The business management of the company will be in the hands of Joseph Thomas Hart, superintendent of the boot and shoe department of the Canadian Rubber Co., while the factory end will be looked after by John Libby, who formerly operated the last department of the Canadian company.

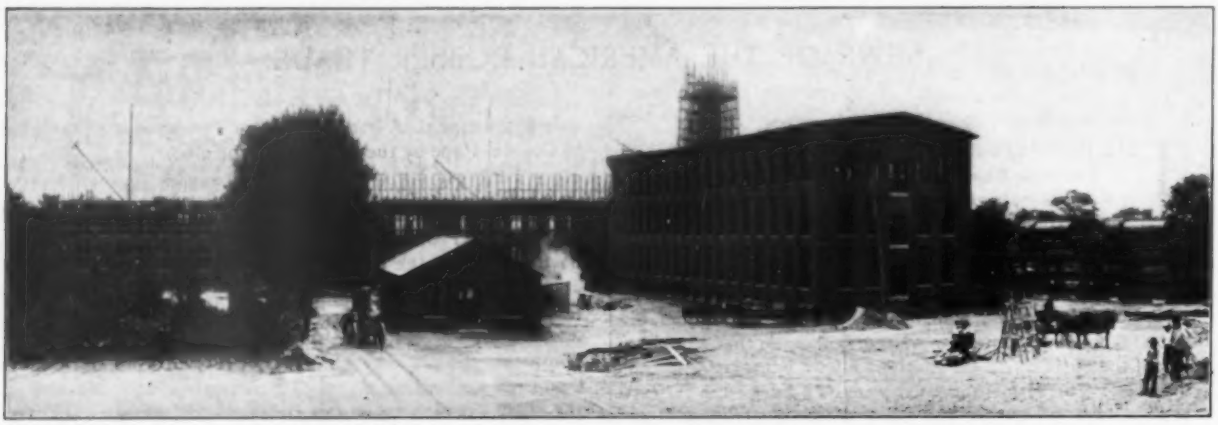
NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Sept. 26	320	10⅛	10	400	37½	35
Week ending Oct. 3	350	10½	10	700	38	36
Week ending Oct. 10	200	10	10	500	37	36
Week ending Oct. 17	1,045	10	7¾	930	36	35
Week ending Oct. 24	100	10¼	8½	110	36½	36½

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High	Low.
Week ending Sept. 26	1,400	16	15	720	70	69½
Week ending Oct. 3	4,830	15⅜	14¼	235	69	66
Week ending Oct. 10	2,025	15½	13⅜	100	69½	69½
Week ending Oct. 17	1,885	14½	13¾	60	68	67⅜
Week ending Oct. 24	1,487	14⅛	14	37	67⅞	67⅛



PLANT OF THE ATLANTIC RUBBER SHOE CO., CRANSTON, RHODE ISLAND.

NEW PLANT OF THE ATLANTIC RUBBER SHOE CO.

JUST at the edge of the town of Cranston, which is really a suburb of Providence, Rhode Island, the fine plant of the Atlantic Rubber Shoe Co. is rapidly approaching completion. The location, from a manufacturing standpoint, is ideal. It is on the main line of the consolidated railroad, with its own siding. It is also close to the Pawtuxet river, assuring plenty of water, and the five cent trolley fares from Providence render it attractive to labor. The illustration on this page shows the present condition of the plant, except the partly finished 100 foot tower at the main entrance. The officers of the company are Frank N. White, president; G. Trowbridge Hollister, (of Vermilye & Co., bankers, New York), vice president; Charles E. Spencer, secretary and treasurer. The directors are the officers named above, together with Latham A. Fish (of Vermilye & Co.), Thomas B. Hidden, J. H. Flagler (of the Standard Oil Co.), Joseph O. Stokes (of the Home, Trenton, and Joseph Stokes rubber companies), and B. H. Hotchkiss. General Manager Henry J. Doughty is at Cranston, busy with superintending the work of construction. Maurice E. Clark, former superintendent of the Joseph Banigan Rubber Co. (Providence, R. I.), has severed his connection with that company and taken the superintendency of the Atlantic Rubber Shoe Co. His late position with the Joseph Banigan Rubber Co. is filled by James Gray.

THE NEW CENTURY RUBBER CO.

NORMAN GREY, of Camden, New Jersey, receiver of this company, on October 9, offered at public sale at East Burlington, New Jersey, the plant, machinery, goods, and chattels of the company, for which was realized $3475, the purchaser being the attorney for interests not at the time disclosed. The sale was confirmed by the New Jersey court of chancery on October 12. The building, ground, and boiler and engines, being leased, were not offered for sale. A carload of reclaimed rubber (29,855 pounds) belonging to the company will be offered for sale by the receiver at No. 54 Harrison street, New York, on November 5, at 12 M.

THE NEW YORK CREDIT MEN'S ASSOCIATION.

THE annual report, dated October 1, records some good work accomplished during the year in the furtherance of its objects in the protection of its members against imposition and fraud and in bringing about mutual improvements in trade customs and usages. The association carries on its work in connection with a National Association, by means of which, when a fraudulent collection agency was driven out of New York last year, it was proceeded against later in various cities in other states, and its head finally placed in jail, where he is now awaiting trial. The objects of this association are most commendable and it should have a larger membership.

COLONEL COLT NOMINATED FOR GOVERNOR.

AT the Republican convention held at Providence, Rhode Island, on October 6, to nominate candidates for the state offices to be filled at the next annual election, Colonel Samuel Pomeroy Colt, of Bristol, was the choice for governor. Colonel Colt filled the office of attorney general in that state, by election, for three annual terms (1883-1886), after having served previously for three years as assistant attorney general. Colonel Colt since 1901 has been president of the United States Rubber Co., in which he has been a director since its organization. He had previously been president of the National India Rubber Co.—an office which he still holds—and is now president of two of the other constituent concerns, the Woonsocket Rubber Co. and the Goodyear's Metallic Rubber Shoe Co. Colonel Colt wrote a letter under date of October 9 accepting the nomination.——The Republican convention at the same time nominated, for reëlection as state treasurer, Walter A. Read, a director in the Woonsocket Rubber Co.——Colonel Colt, if elected, will be the second prominent member of the rubber trade to fill the office of governor of his state, the first having been the Hon. Augustus O. Bourn, president of the Bourn Rubber Co. (1883-1885).

COL. SAMUEL P. COLT.

ATTRACTIVE ADVERTISING FEATURES.

THE Candee Rubber Co. have brought out a series of ten photo-reproductions of "The World's most Famous Paintings" on cards 6×8 inches. On the back of each is a brief story of the picture and of the artist, with just enough reference to the subject of rubber footwear. The cards will be prized by the shoe retailer's customers—and others—fortunate enough to get them.——The Meyer Rubber Co. have been distributing a series of blotters, faced with lithographed copies of other pictures which, if less famous, are spirited and amusing.——A

novelty in advertising banners is one to be stretched across a retailer's window, or along the wall, instead of hanging in a vertical position. Such a banner, 5 feet long and 10 inches wide, silk faced and metal tipped at the ends, carries the words CANDEE RUBBERS printed in bright colors.——The above are specimens of the material recently prepared by the versatile advertising manager of the United States Rubber Co., Mr. John P. Lyons.

COMBINATION RUBBER AND BELTING CO.

IN the United States district court at Trenton, New Jersey, on October 28, J. Kearney Rice, as counsel, filed a petition in voluntary bankruptcy for The Combination Rubber and Belting Co., of Bloomfield. Wilfred Clark, of New Brunswick, was appointed receiver and his bond was fixed at $15,000. The next step will be the choice of a trustee, by the creditors of the company, subject to confirmation by the court, and after such choice has been made it is understood that steps will be taken looking to a reorganization, with increased capital. The Combination Rubber and Belting Co. was incorporated in New Jersey, March 7, 1901, with $350,000 capital authorized, and acquired the factory of the long established Combination Roll and Rubber Co., at Bloomfield, which has since been operated in making mechanical rubber goods. The officers of the company are: Adolph Kern, president; Joseph B. Bloomingdale, vice president; Henry Kern, secretary and treasurer; Julius Kahn, manager of sales. The Messrs. Kern are engaged largely in the metal refining trade, being officers of the Vulcan Detinning Co., and Mr. Bloomingdale is one of the proprietors of a large department store in New York. M. J. Hirsch, No. 68 William street, New York, counsel for the company, informs THE INDIA RUBBER WORLD that their liabilities, in round numbers, amount to $165,000, of which $30,000 is due for merchandise and the remainder for borrowed money and bank accommodations. The nominal assets are about $270,000, of which the premises and plant figure at something over $200,000. The purchase price of the factory was $100,000, since which time as much or more has been invested in a new building and additional machinery. The improvements involved the borrowing of money, which is about to become due, without the company being prepared for payment, on account of the failure of certain plans for placing bonds. It is understood that the officers mentioned above are the principal creditors.

POPE MANUFACTURING CO. BRINGS SUIT.

THE sheriff of New York county on October 14 received a writ of attachment against the Rubber Goods Manufacturing Co., in favor of the Pope Manufacturing Co., on an assigned claim for $200,000 of the American Bicycle Co., to recover which sum an action has been brought in the New York supreme court. Under date of November 8, 1899, the American Bicycle Co. sold to the Rubber Goods Manufacturing Co. three rubber tire plants—the Hartford, the Indianapolis, and the Peoria—the consideration involving an agreement by the American Bicycle Co. to purchase at least 90 per cent. of its requirements in tires from the Rubber Goods company, for five years, while the latter agreed to pay an annual rebate of $200,000 on such business for the same period. The basis of the present suit is the $200,000 rebate alleged to have been due on November 1, 1902, and not paid. President Dale, of the Rubber Goods company, states that the counsel of his company are clearly of the opinion that the contract made by the American Bicycle Co. could not be transferred to the Pope Manufacturing Co., and had advised that the matter be allowed to come before the courts, rather than that any settlement be made with the Pope company. Bond was given and the attachment was vacated on October 15, but the case has not yet been set for trial. The Pope company's attorneys in the case are Butler, Notman, Joline & Mynderse, of New York.

A RUBBER FLOOR TILING PATENT SUIT.

THE Gutta Percha and Rubber Manufacturing Co. has filed a suit against the Peerless Rubber Manufacturing Co. (both of New York), alleging infringement of a patent on rubber floor tiling [No. 543,583, issued July 30, 1895, to John Murphy]. An injunction and accounting are asked. This patent provides for the joining of partially vulcanized blocks of rubber with rubber cement and the completion of vulcanization after they are in place. The Peerless company maintains that this is simply shop practice and is not a patentable process. It claims that the same methods were in use in rubber factories before the patent referred to was granted. The method of putting together these rubber squares which makes cohesive the entire floor covering had been practiced before, according to the contention of the defendant company, in the lettering of rubber foot mats and in other rubber products. Besides the Peerless company, several other concerns making rubber tiling are using practically the same process. Even if they are not made defendants to similar suits, they will look with great interest upon the outcome of this litigation.

TO INSPECT RUBBER FOR THE GOVERNMENT.

THE United States civil service commission announces that an examination will be held November 11 to secure eligibles from which to make certification to fill a vacancy in the position of inspector of rubber in the quartermaster's department at Schuylkill arsenal, Philadelphia, at a salary of $1500 per annum, and other similar vacancies as they may occur. This examination is open to all citizens of the United States who comply with the requirements.

NEW INCORPORATIONS.

ELECTRIC Rubber Manufacturing Co., October 6, 1903, under New Jersey laws, to manufacture rubber goods; capital, $1,000,000. Incorporators: Charles H. George, Smith L. Muller, and William O. McCarthy, all of Jersey City, New Jersey. The headquarters at present are in the office of the Title Guarantee and Trust Co., in Jersey City, whence THE INDIA RUBBER WORLD is informed: "Nothing has been done since the incorporation except to conduct a few experiments, the nature and details of which we would rather keep quiet at the present time. As soon as the company is financed and ready to do business we should be pleased to give all the information which you may care to have."

=The George W. Knowlton Rubber Co. (Boston), October 19, 1903, under Maine laws; capital, $10,000. George W. Knowlton is president and treasurer. The other incorporators are Edwin A. and A. G. Knowlton, of Arlington, Massachusetts, and G. M. Watts, Portland, Maine. To succeed copartnership by same name, engaged in the packing trade, at No. 33 Broad street, Boston.

=The Colorado Rubber Co. (Denver), October 12, 1903, under Colorado laws; capital, $25,000. Object, to wholesale rubber goods exclusively, including "American," "Para," "Woonsocket," and "Rhode Island" brands of rubber footwear, mackintoshes, oiled clothing and druggists' sundries. The officers are Jacob Hammer (formerly secretary and treasurer of the St. Paul Rubber Co.), president; Albert Fischer (president of the St. Paul Rubber Co.), vice president; Frank H. Donahower, secretary and treasurer.

=East Burlington Rubber Co. (East Burlington, New Jersey), October 17, 1903, under New Jersey laws; capital, $100,000.

Incorporators: E. E. Clift, J. H. Camp, John Dearbone, and Joseph H. Edwards, of Philadelphia, and Lewis Starr, Camden, New Jersey. It is understood that the object is to operate the plant of the New Century Rubber Co., manufacturers of reclaimed rubber, which recently went into liquidation.

=Mercury Rubber Co., October 27, 1903, under New York laws; capital, $15,000. Directors: I. Markowitz and George Bernard, New York city; Charles F. Hart, Elizabeth, New Jersey.

A STRIKE ENDED AT TORONTO.

AFTER having been on strike for ten weeks, the employés of The Maple Leaf Rubber Co., Limited, at Port Dalhousie (near Toronto), on October 21, at a meeting in their union hall, decided to apply in a body to be taken back in the company's employ. The management of the company decided, however, that each applicant for work must be considered individually, and each was required to sign new factory regulations. The company does not recognize the Union, but Superintendent R. F. Foote assured the employés that they should receive hereafter as high wages as were paid in any other Canadian factory for the same work, and in some cases this will result in an increase of wages.

RUBBER WORKERS' UNIONS.

THE officers of Akron Local, No. 5, are: Charles Fornaker, president; John Callahan, vice president; E. M. Goodenberger, corresponding secretary; W. A. Labhe, secretary and treasurer.

TRADE NEWS NOTES.

BUSINESS in the mackintosh department of the Apsley Rubber Co. (Hudson, Massachusetts) is reported very good. This department will now be enlarged, owing to room being gained by transferring to the new building mentioned in our last issue some of the boot and shoe work formerly carried on in the same building with the mackintosh work. Already about 100 new sewing machines have been installed in the stitching rooms.

=Letters patent of incorporation have been granted to A. V. Roy, John J. McGill, Edward Gauthier, Gustave Gravel, and M. Huberdean, all of Montreal, Canada, as the Corona Rubber Co., with capital of $100,000, and headquarters in that city.

=Mr. Albert T. Bell, for some time manager of the New York store of The B. F. Goodrich Co. (Akron, Ohio) has resigned his position, and will take charge of a large hotel, to be known as "The Chalfonte," soon to be erected at Atlantic City, New Jersey. Mr. F. P. Stewart takes his place as manager of the New York store.

=Thirty shares of American Chicle Co., preferred, were sold at auction in New York on October 7 at 80½.

=The Sweet Tire and Rubber Co. (Batavia, New York) were exhibitors at the recent national carriage convention at Boston, where they booked some good orders, and it is stated that they have now business enough in hand to keep the factory busy through the season.

=The fact that the control of the Glenark Knitting Co. (Woonsocket, Rhode Island) is now in the hands of important shareholders of the United States Rubber Co. has given rise to reports that the former company is controlled by the latter. The statement has been authorized, therefore, that the United States Rubber Co. stand on the same basis in relation to the purchase of Glenark goods as any other large customers.

=Selden W. Tyler has retired from J. H. Stedman & Co., Inc. (Boston), dealers in scrap rubber—having sold his interest to the Stedman family—and accepted a position with Carter's ink Co. (Boston), a concern with which he was connected formerly.

=The Rubber Step Manufacturing Co. (Exeter, New Hampshire) lately filled an important order for rubber step pads for a German coachbuilding house.

=The Connecticut Rubber Co., extensive retailers of rubber goods at Hartford, Connecticut, were active supporters of the recent "Merchants' Week" enterprise in that city. During the week ending October 3, visitors from the neighboring towns, who came in under a half-fare arrangement made with the railways, were offered a concession in prices on retail purchases, the idea being to make the people of those towns acquainted with the Hartford stores in a way that would make a good impression.

=The Cambridge Manufacturing Co., organized last spring to make golf balls at Plantsville, Connecticut, have removed their plant to Bridgeport, in the same state. Mr. W. T. Dale is not now connected with the company.

=J. F. Preston, of the Preston Hose and Tire Co., has brought suit against six members of the board of trade of Marlboro, Massachusetts, for a sum claimed to be due and unpaid, on account of a bonus promised to him in consideration of the location of his factory in that town.

=William S. Hunnewell, lately of Exeter, New Hampshire, has sold his residence there and purchased a ranch at New Chicago, Montana, he being now connected with the Goodyear Rubber Co.'s business at Butte, Montana.

=Suit has been brought against the Diamond Rubber Co. (Akron, Ohio) by Mattie D. Vanderhoff, for damages in the sum of $1995, claimed for injuries alleged to have been sustained by her, while employed by the company, through slipping on a platform outside the factory, on which sleet had fallen.

=William Meagher, who has been appointed chief engineer in the factory of the Joseph Banigan Rubber Co. (Providence) was engineer in the factory of the Marvel Rubber Co. (Woonsocket) when that concern was in business.

=The factory of the Manhattan Rubber Manufacturing Co. (New York), at Passaic, New Jersey, though located in the district so disastrously flooded early in the past month, was not obliged to cease operations. Many other mills were closed, however, and the damage to Passaic has been estimated at $2,000,000.

=The new four story brick building of the New York Insulated Wire Co., at Wallingford, Connecticut, mentioned in this journal in August as being under way, is reported completed.

="There is a Place in Every Mill for the 'Original Rubber Man'" is the title of an attractive adverstising folder issued by the Boston Belting Co., who manufacture so many rubber requisites for mill and factory use.

=The new rubber shoe factory of Terrence McCarty, at Bristol, Rhode Island, began operation on October 23.

=The Whitehead Brothers Rubber Co. (Trenton, New Jersey) have been making further improvements in their plant, putting in new shafting and gears, and adding machinery, including a Royle tubing machine. Their hose capacity is now 14,000 feet a day.

=Captain John J. Farley has left the druggists' sundries department in the factory of the National India Rubber Co. (Bristol, Rhode Island) to accept the position of foreman in the same department in the factory of Morgan & Wright (Chicago). Before leaving Bristol, Captain Farley was the recipient of a handsome piece of jewelry from the employés of his department at the National factory, together with an expression of their best wishes for his success in his new field. Captain Farley derives his military title from being commander of a company in the Rhode Island militia.

=The vacancy in the office of president of the Mishawaka Woolen Manufacturing Co. (Mishawaka, Indiana) due to the recent death of Martin V. Beiger probably will not be filled before the regular annual election, in January next.

=Charles W. Barnes, who has been connected for several years with the Boston offices of the United States Rubber Co., has removed to New York, where he will fill the position of assistant to Edward R. Rice, manager of the branch stores of the company since June, 1902. On the evening of October 9 a complimentary dinner was given to Mr. Barnes, at the Algonquin Club, Boston, by a number of his friends in the rubber business in that city, on which occasion a handsome scarf pin was presented to Mr. Barnes as a testimonial of their regard. The presentation speech was made by George P. Eustis, of the American Rubber Co.

=The firm of Lamkin & Foster (Boston), wholesalers of boots and shoes and rubbers, whose embarrassment was reported in THE INDIA RUBBER WORLD for August, has been succeeded by Lamkin & Foster, Incorporated, with a charter under Massachusetts laws dated October 13, 1903, with an authorized capital of $200,000, in equal shares of preferred and common stock. Alfred S. Foster is president, Charles A. Mooar vice president, Laurence A. Mooar treasurer, and Guy Lamkin and Clarence T. Mooar additional directors.

=It is stated that the showing made of the business of the United States Rubber Co., at the monthly meeting of directors on October 15, showed that the business of the company for the four months ended August 1 was the largest for the same period in any year of the company's history.

=Frank E. Hall, who for so many years past has been connected with the rubber trade, has designed a new type of gasoline engine for automobiles, and has incorporated the Hall Gasoline Engine Co., with a plant at Wollaston, Mass. It will be remembered that Mr. Hall is the inventor and patentee of the Hall sectional tire. A set of these tires is now running on a large delivery wagon owned by R. H. Macy & Co., of New York. These tires are said to be the largest ever made, each block weighing 10 pounds, the four tires weighing 700 pounds. The load which they carry is about 19 tons and the tires have now been in use about five months.

=The Hood Rubber Co. (Boston) are distributing to the stores handling their boots and shoes some attractive advertising pictures. One, framed under glass, is labeled "Above All Others," and shows a case of "Hood rubbers" carried far above the earth in a balloon.

=E. A. Sprague, formerly with Richard Levick Sons & Co. (Philadelphia), and prior to that a well known salesman of rubber goods to hospitals and the druggists' trade in New England and New York, has accepted a selling position with Mulconroy Co., Inc. (Philadelphia).

=William J. Kelly, who has been connected for several years with George A. Alden & Co. (Boston), as their New England salesman, has accepted a position with Poel & Arnold (New York). Mr. Kelly's many friends in the New England trade, while regretting his removal, wish him the best of success in his new position.

=R. L. Chipman, who for more than two years has been the resident agent at Akron, Ohio, of George A. Alden & Co., and the New York Commercial Co., has returned to Boston to fill the vacancy in the Alden forces made by the resignation of W. J. Kelly. It is understood that Harold W. French will go from the Boston office to Akron to replace Mr. Chipman.

=The place of business of I. Fajan's Electrical Construction Co. (No. 42 East Twenty-third street, New York) has been attached on two executions, one of which, for $1108, is in favor of The India Rubber and Gutta Percha Insulating Co. (New York). The company was incorporated in 1901, with $5000 capital.

=Mr. George A. Lewis, president of the Beacon Falls Rubber Shoe Co. (Beacon Falls, Conn.) and president of the Naugatuck National Bank, has just returned from the annual national Bankers' convention in San Francisco, California.

PERSONAL MENTION.

MR. JOHN C. WILSON, president of The India Rubber Co. of New Brunswick, N. J., and Miss Grace L. Hall, daughter of Mr. John H. Hall, of Hartford, Conn., were married in the latter city on the evening of October 7th, in the church of the Good Shepherd, the rector being assisted by the Rev. Charles E. Woodcock, Mich., an old friend of the bride's family. Mr. Lewis D. Parker, president of the Hartford Rubber Works Co., was best man; Miss Emma Rutherford of New York was the maid of honor, and Miss Margery Parker the flower girl. Among the wedding presents were several from the company of which Mr. Wilson is president.

=The Governor Betts named in a recent despatch from the Philippines, reporting the end of an uprising in the province of Albay, is Mr. Arlington U. Betts, who used to be engaged extensively in the rubber cement trade at Toledo, Ohio. He has now been governor of Albay for more than two years. His territory embraces 15,000 square miles, in the southern part of the island of Luzon, with about 183,000 inhabitants, engaged in hemp growing.

=Mr. Henry H. Holland, who has been formally appointed manager of the European depot of the United States Rubber Co., in London, to succeed the late John W. Knott, whose assistant he was formerly, is making his first visit to the United States, with a view in part to visiting the company's factories.

=The engagement is announced of Mr. Clarence E. Hill, traffic manager of the Boston Rubber Shoe Co., Boston, and Miss Alice H. Robinson, of Providence, Rhode Island.

=Mr. G. Louis Richards, formerly Boston city sales agent for the Boston Rubber Shoe Co., is now president of a New York real estate corporation.

=The will of the late Martin V. Beiger, president of the Mishawaka Woolen Manufacturing Co., who left 12½ per cent. of his estate to De Pauw University and 5 per cent. to the New York Chatauqua, is being contested by his widow, who filed papers to that effect at South Bend, Indiana, on October 7.

=Mr. Herbert F. Moore has resigned as instructor in machine design at Cornell University to accept a position as mechanical engineer at Riehle Bros. Testing Machine Co. (Philadelphia).

BALATA FROM DUTCH GUIANA.

THE Balata industry in Dutch Guiana in 1902, according to a British consular report, was more prosperous than for several years past, the exports being stated as follows:

	1899.	1900.	1901.	1902.
Pounds.....	260,922	459,371	521,400	728,200

The latter figure is only a little smaller than the highest production ever reached (in 1896), and brings up the average for the above four years to the usual average for the colony, thus offsetting the depression in the output a few years ago. A peculiar fact stated in the consul's report is that much Balata is lost in transit between the "bush" and the seaport, which is leading the traders to insure their produce. The report reads: "It is difficult to say how much was lost in this way, but within six months claims were made against a single insurance company for about £7500, the value—insured—of some 90 tons lost in the rivers by the upsetting of the boats."

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The second annual convention of the Amalgamated Rubber Workers' Union of America was held at Akron during the four days October 12–15. Fourteen unions, affiliated with the national organization, were represented by delegates. At the opening session of the convention, on Monday afternoon, Mayor C. W. Kempel, a union man, who was elected by the working men of the city, delivered an address of welcome. J. D. Thomas, president of the Central Labor Union of Akron, delivered a welcoming address in behalf of organized labor in this city, and, together with the mayor, took an active part in the convention. On Monday evening the visitors were the guests of the Central Labor Union. On Tuesday and Wednesday the sessions were of a business nature and were behind closed doors. On Wednesday afternoon the question of child labor was discussed, and the union pledged itself to attempt to secure legislation unfavorable to the employment of children in factories and to the employment of women between the hours of 6 P.M. and 6 A.M. The delegates present were:

Chicago Local, No. 1.—John Dean, W. T. Dunn, Harry Brick.
Concord Junction Local, No. 2.—Clarence E. Akerstrom, Charles H. Stevenson.
Cambridge Local, No. 3.—Thomas J. Edwards.
Trenton Local, No. 4.—James O'Donovan, Harry Archer, E. Thomas Staunton.
Akron Local, No. 5.—William Labbe.
Kokomo Local, No. 6.—Clem Jackson, Fred Cooper.
Port Dalhousie (Ontario) Local, No. 7.—John J. Phillmore, Frank Blaine.
Montreal Local, No. 8.—J. E. Bernard.
*Montreal Local, No. 9.—Maud Jerett.
New York Local, No. 10.—Robert Gorham, Edwin Turnberger.
Toronto Local, No. 11.—George A. Martin, Geale Woodall.
St. Louis Local, No. 12.—Wilbur Walton, J. M. Cannon.
Hamilton Square (New York) Local, No. 13.—William Scudder, John J. Redwood.
*New Haven Local, No. 14.—Maud Heaney, Agues Donahue.

[*These unions are composed of women.]

Officers for the ensuing year were elected as follows:

President—Thomas J. Edwards, Cambridge, Massachusetts (reëlected).
First Vice President—Harry Archer, Trenton, New Jersey (succeeding C. H. O'Boyle).
Second Vice President—Charles H. O'Boyle, of Chicago (succeeding C. H. Stevenson).
Third Vice President—John J. Phillmore, of Port Dalhousie, Ontario (succeeding M. E. Mahoney).
Secretary and Treasurer—Clarence E. Akerstrom, of Concord, Massachusetts (reëlected).
General Organizer—James O'Donovan, of Trenton (succeeding W. T. Dunn).

The next annual convention will be held in Trenton, in 1904. In discussing the question of differences between workmen and their employés, President Edwards said to your correspondent: "I find that the Eastern manufacturers do not feel the same toward organized labor as does the Western manufacturer. There exists in the East a perfect understanding between organized labor in the rubber trade, and there is little trouble. Here no such feeling exists, or at least only in a limited degree, and to cultivate such a feeling was one of our objects in coming here."

* * *

THE annual meeting of the Diamond Rubber Co. was held in Akron on October 13, and the election resulted in the old officers being chosen for another year, as follows:

President—F. A. HARDY, of Chicago.
Vice President and Superintendent—A. H. MARKS, Akron.
Secretary—W. B. MILLER, Akron.
Treasurer—A. H. NOAH, Akron.

These officers, with O. C. Barber, Akron; J. K. Robinson, New York; and W. B. Hardy, Chicago, constitute the board of directors. The question of the erection of a new building was not taken up. Treasurer A. H. Noah states that the company have no intention of erecting an office building at the present time. "The business of the company during the past year was excellent," said Mr. Noah. "The tire trade was the best in the history of the company, especially in automobile and bicycle tires. Naturally the automobile tire trade was better than ever before owing to the increase in the number of machines on the market, and our company made more bicycle tires than ever before." When asked if there is any reason to expect that the trade in bicycle tires next year will exceed this year's business, Mr. Noah stated that he knew of none. The results achieved in the use of Diamond tires in the automobile endurance contests were a source of great satisfaction to the officers of the company.

* * *

THE Lilly Rubber Manufacturing Co., of Barberton, have increased their capital stock from $10,000 to $50,000. The company will place a limited amount of stock on the market, and with the proceeds will increase the capacity of their plant. The officers of the company are: Charles Ammerman, president; E. E. Beam, vice president; H. Benner, secretary and treasurer; W. C. Lilly, general manager. In speaking of the increase of capital stock, President Ammerman said: "The Lilly Rubber Manufacturing Co. have been remarkably successful for a new company—we were organized only a little more than a year ago—and during the past year we have built up a trade which warrants us in increasing our capital stock. We expect to greatly increase the capacity of our plant, and to turn out more goods than ever."

* * *

IN the common pleas court at Akron on October 6, on the application of Ossian G. Lyon, vice president of the Lyon Rubber Co., a receiver was appointed for that concern, the court naming A. E. Kling for that position. With the exception of the People's Hard Rubber Co., this is the first instance of the failure of a rubber company in the history of Akron. The present case is not one of importance, the Lyon Rubber Co. having been capitalized at only $10,000, and its business never having reached large proportions. The company was incorporated October 1, 1902, by several Akron business men, none of whom had had any experience in the rubber business, to succeed a small partnership business formed a few months previously. Receiver Kling informs your correspondent that he will not continue the operation of the plant, but will apply for an order of sale for the property. If the accounts due can be collected—and he thinks that the greater part will be—the creditors can be paid in full.

* * *

REFERRING to the agreement among the rubber tire makers, mentioned in the last INDIA RUBBER WORLD, an Akron rubber manufacturer said to your correspondent: "It has been proved to the satisfaction of all, that manufacturers of rubber tires are able to meet any demand for tires. If the makers of automobiles desire cheap tires, we can make them, no matter how badly we dislike to do so. Competition in the rubber tire trade is so keen now that the manufacturer must meet the demands of his customers, no matter what they may be. If one company refuses to make a cheap tire others stand ready to do so, and the company which desires to put only the best grade of goods on the market have no choice but to follow. It is an unfortunate thing that the automobile makers have not recognized the fact that cheap tires are a bad thing. Just as a chain

is no stronger than its weakest link, so is an automobile no stronger than its weakest point. This point, owing to the too frequent desire on the part of the maker to economize, is often the tire. By paying an utter disregard to the quality of the tire with which he equips his machine the automobile maker has done not a little to injure his own business. It is a well known fact that the tendency of cheap tires to wear out and puncture frequently has been the cause of many people becoming disgusted with the automobile. It was so with the bicycle, and tire makers have been going through the same experience they had with the cheap bicycle tire. The new agreement seems to me to be the best thing for all parties concerned that could have been devised. Without the maker's guarantee the buyer will not purchase tires, so it is an assured fact that the agreement will accomplish the purpose for which it was made. While automobile makers have been so busy devising new things to increase the speed and efficiency of their machines, the buyer, the man who puts up his hard cash, has been studying some on the question of tires, and I make no wrong assertion when I say that the buyer is perfectly satisfied with the agreement. He realizes that it means better service for him, and he is content. I can see no reason at all why the agreement will not accomplish its purpose to the satisfaction of not only the tire maker but the manufacturer of automobiles and the users of them as well."

* * *

MR. HOWARD HOSKIN, bookkeeper for the Goodyear Tire and Rubber Co., was married to Miss Ella B. Hershey, daughter of Mr. E. A. Hershey, of Columbus, Ohio, on Wednesday evening, September 30. The wedding was solemnized by Dr. Washington Gladden of Columbus. They will make their home in Akron.

THE PARA RUBBER PLANTATION CO.

A MEETING for the reorganization of the Para Rubber Plantation Co. was held in Chicago on October 6, at which it was decided to change the name to the International Rubber and Trading Co., and to increase the capital stock to $10 000,000, divided equally between preferred and common shares. The capital formerly was $5,000,000, all common stock. Milton Doud was elected secretary and treasurer, in place of F. M. Crawford, who formerly held these offices. There are now two vacancies in the directory, which President Cudahy says he will try to have filled by well known and substantial business men. The offices of the company will continue at No. 52 Broadway, New York, which was the headquarters of the Para Rubber Plantation Co.

Mr. John Cudahy, president of the company, stated to THE INDIA RUBBER WORLD correspondent that the character of the company's properties was such as to warrant him in claiming that the company would be a financial success. He said that heretofore much advertising matter had been circulated which he did not approve of and which was misleading. He said that this had been stopped, and that it had led to the present reorganization steps. Mr. Cudahy stated that he proposed to take hold of the affairs of the International Rubber and Trading Co. personally and manage them in a way that would develop the properties and be satisfactory to the most exacting shareholder. He said that the man chosen for the post of secretary is a transportation man.

Early in the month parties interested in the rubber industry in New York and its vicinity received letters dated October 7 and signed by Carl A. G. Adae, "investment broker," No. 31 Barclay street, New York, offering 500 shares of the Para Rubber Plantation Co. at $7.35, the par value being $10. Mr. Adae was found to have desk room on an upper floor at the address mentioned, with a firm dealing in florists' supplies. His name did not appear on any sign and he was found only after considerable effort. He stated that the stock he had to offer was held by a young man in the employ of the Para Rubber Plantation Co., and at present on their properties on the river Casiquiare. Mr. Adae stated further that the company had paid two 6 per cent. dividends within a year from the sale of $300,000 worth of rubber in New York. As for transportation, he stated that at certain seasons the Casiquiare flowed toward the Orinoco, which furnished an outlet to the seaboard, and that at certain other seasons it flowed toward the Negro, when that stream was used for transportation. When Mr. Adae was called upon, however, he said that it had been decided to withdraw all the stocks from sale, pending a reorganization of the company "on a larger scale."

THE OBITUARY RECORD.

HENRY STEERS, of New York, who was accidentally drowned on September 29 while fishing near his summer home in Massachusetts, was a director in the Rubber Goods Manufacturing Co.—which position he had held from the first organization of that company—and in a number of financial institutions. He was born in New York, September 14, 1832, and grew up in the shipbuilding business with his uncle, George Steers (who designed and built the famous schooner yacht *America*), to which business he succeeded and expanded to very large proportions, retiring in 1875. Mr. Steers was the last survivor of the crew which sailed the *America* in English waters in 1851, bringing to the United States the Cup which British yachtsmen ever since have been trying to regain.

JAMES MCCORD, one of the best known merchants in the West, and who died at his home in St. Joseph, Missouri, on September 25, was born in Virginia, January 7, 1826. At an early age he removed to Missouri, where he began a business association with the late Abram Nave, which lasted 52 years and proved exceptionally successful. McCord at the time of his death was interested in a number of wholesale houses, including the McCord Rubber Co., incorporated in 1895, to continue the boot and shoe trade of the St. Joseph branch of E. B. Preston & Co. (Chicago), after the death of Mr. Preston in the same year.

CHARLES RUNYAN died at his residence in New York on October 13, in his sixty sixth year. His business career began about forty-five years ago, in the employment of the Union India Rubber Co. (New York,) then one of the most important rubber manufacturing concerns in the country, and later he filled for a while the office of secretary and treasurer of that corporation. He next became interested in the coal business, and was successively secretary and treasurer of the Superior Mountain Coal Co., president of the Hoboken Coal Co., and president of the Communipaw Coal Co. The latter position he held at his death.

MARSHALL FIELD, the Chicago merchant prince, after an exhaustive series of tests, has become a firm believer in the value of the rubber horseshoe. The horses employed in his business, since being shod with rubber, give six years of service, instead of three years as formerly. And that the horses themselves approve is evidenced by the fact that they refuse a hard pavement every time unless they have on rubber shoes—that is, of course, once they have acquired the "pad habit." The city of Chicago, by the way, with its enormous use of horses, has become one of the best markets in the world for rubber horseshoe pads.

THE TEXTILE GOODS MARKET.

IT is not often that the rubber trade is called upon to face such conditions as exist at the present time. In years past, the first of October saw the greater part of the textile requirements of the rubber mills covered for the entire year, but November has come and probably not 2 per cent. of the mills have closed contracts for their cotton fabrics. The reason is clear to those who have watched the fluctuations of the raw cotton market. Last month the manufacturers of duck and sheeting looked forward to the middle of October when they would have closed up all the business their mills could take care of for the season, but when that time came both the seller and the consumer were as much at sea as ever, and a fortnight later they were no better off.

A week ago some thought that the market had settled down to a substantial and steady basis, for a time at least. A few rubber concerns made contracts, and a number of the stitched belting factories also placed their contracts for the year. These arrangements are said to have been made on the basis of 10 cent cotton, and the duck contracts were made at about 20 cents a pound. Some have paid more and others less, but it is understood that 20 cents is about the average. The past week saw a number of rubber manufacturers in the market looking over the field, and it is understood that some of them were about to close contracts for the year, but in the meantime the cotton market took a sudden jump and the textile manufacturers shrunk from proceeding farther until conditions became more settled. Here the matter stands.

The developments during the past day or two in the cotton market have caused those who have made contracts to congratulate themselves, as good authorities are now figuring on a 10,000,000 bale crop, but this is a "bullish" estimate, and must be accepted for what it is worth. The price of raw cotton has, however, advanced during the past week ½ cent a pound and the market is in the complete control of the "bull" element. But meanwhile the rubber trade and the stitched belting people are not suffering for textiles. The latter having placed such heavy orders last year for their season's supply they are now in possession of sufficient quantities of duck to keep their mills running until such time as new contracts can be made.

The past week has seen considerable quantities of sheeting change hands, the rubber footwear concerns having bought quite freely at full prices, and the mills producing special grades are well employed at present. The duck mills have been buying cotton as fast as the right grade came into sight, and the most of them have enough to carry them well along into next year. These mills have been running full for several weeks, and the past week marked the departure of commission house representatives out into the rubber field with a view to talking up new business. It is very doubtful if sellers will make contracts on anything less than 10 cent cotton, and perhaps they will ask an even higher price. Many of the spinners have been delaying their purchase of cotton in hope to see a decline, while the British consumers have bought all the cotton they could obtain. This has placed the American spinners in the position of hunters after desirable grades, with poor success in covering their requirements.

The following are the prices of cotton middling upland spots at the ports of New York, New Orleans, and Liverpool:

	New York.	New Orleans.	Liverpool.
October 6	9.50 cents	9¾ cents	5.78*d.*
October 13	9 60 cents	9⅞ cents	5.64*d.*
October 20	9 80 cents	9¾ cents	5 68d.
October 27	10.45 cents	10⅛ cents	5.82*d.*

The stitched belting people held a meeting in New York a fortnight ago for the purpose of revising prices and adjusting a number of minor matters of interest to the manufacturers Representatives were present from all the concerns in the country except the Gandy company, of Baltimore, and as this concern produces about one-third of all the stitched belting used in the United States, its competitors thought it would be a case of playing "Hamlet" with *Hamlet* omitted, and so they sent a delegation to see the Baltimore manufacturer. The conference resulted in settling the question of coöperation in the matter of a readjustment of prices, but the Gandy company refused to enter into any agreement that would restrict its independence in any respect. It is said that there will not be any advance in the price of belting, but the prices on the various kinds will be changed somewhat and made more uniform.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

	Pick.	Yds. to Lb.	
36″ Household Favorite,	56x60,	4.00	5¼ cents.
40″ Household Favorite,	56x60,	3 60	5¾ cents.
36″ Henrietta, L. L.,	48x52,	4 00	5 cents.
39″ Henrietta,	68x72,	4.75 (net)	5 cents.
38½″ Henrietta,	64x64,	5 15	4½ cents.
40″ Henrietta,	48x40,	2.85 (part waste)	6¼ cents.
36″ Florence C.,	44x44,	6.15	4 cents.
36″ American L.,	64x04,	5.00 (net)	4¾ cents.
40″ Majestic C. C.,	48x48,	2.50	7⅜ cents.
40″ Majestic B B. B.,	do	2.70	6⅞ cents.
40″ Majestic B. B.,	do	2 85	6½ cents.
40″ Elcaney,	do	3.60	5¾ cents.
36″ India,	do	3.00	5¾ cents.

Sheetings.

40″ Highgate... 5¾c.
40″ Hightown...6 c.
40″ Hobart.....6½c.
40″ Kingstons...7½c.
39″ Stonyhurst...5¼c.
39″ Sorosis.....5 c.
40″ Seefeld.....8 c.
40″ Selkirk... . 7½c.
40″ Sellew ..... 7¾c.
48″ Mohawk....10 c.
40″ Marcus. .. 5¾c.
40″ Mallory.....5 c.
36″ Capstans....4 c.

Osnaburgs.

40″ Iroquois.....9 c.
40″ Shamrock...9 c.

Ducks.

40″ 7 oz. Cranford. ... 8¼c.
40″ 8 oz. Chartres..... 8¾c.
40″ 10 oz. Carew. 11 c.
40″ 11 oz. Carita. 12 c.

GERMANY AND THE DUTY ON ASBESTOS.

FROM "THE MONTREAL HERALD."

"OF one thing Canadians may be certain and it is that Germany will not place any duty on raw materials which may be sent from Canada into that country. My reason for saying so is that the Government itself is a large user of the raw materials sent from Canada and would not be willing to add to its cost."

This statement was made to a *Herald* representative at the Place Viger, by Mr. J. Krug, of Hamburg, the only agent for Canadian asbestos in Germany.

"The demand for Canadian asbestos," he added, "has increased rapidly, as its quality is much superior to that obtained from either Georgia or the United States and certain parts of Russia. The output of asbestos in the Province of Quebec, will this year total over 26,000 tons and this will be quite sufficient to supply the markets of the United States, England and Germany.

"Prices are somewhat lower than last year, and owing to the new purposes that are being found to which it can be put we expect that the demand as far as Germany, at least, is concerned, will be much greater, as far as quality is concerned there is not any other country that can compete with Canada for asbestos."

ONE of our readers in London writes to ask for information concerning a device or process for extracting the *latex* from rubber trees by means of suction, which was referred to some time ago in THE INDIA RUBBER WORLD. We are not aware that this method has been practically developed as yet.

NEW TAX ON RUBBER AT MANAOS.

THE state of Amazonas (Brazil), by a law enacted September 9, 1903, grants to the Banco Amazonas, a credit institution to be established at Manáos by Charles Figueiredo, the right to levy a tax of 100 reis per kilogram on all Rubber, and 80 reis per kilogram on all Caucho produced in that state at the time the same is placed upon the market. This is in addition to all other taxes now levied upon rubber at Manáos. The new tax is to be levied by the state authorities and delivered monthly to the proposed new bank, the capital of which is required to be 2,000,000 milreis [=$500,000], with the privilege of increase. The concession is to exist for ten years. The bank shall have a department for mortgages and commercial transactions, and may engage in all branches of the banking business. One provision is that after the profits of the new bank shall exceed a certain percentage, new shares equal to the gain shall be created and distributed gratis to the producers of rubber in proportion to the amounts they may have paid under the levy, said shares to be entitled to dividends from future gains of the bank, but not from the proceeds of the tax.

The United States consular agent at Manáos (Mr. George E. Pell) estimates that with an annual production of rubber in Amazonas of 16,000 tons, the new tax—equal to 1,600 000 milreis—will, at the present rate of exchange, amount to $400,000. He adds:

At certain times in the year many native houses require money to tide them over until they receive rubber from upriver. At such times in the past it has been customary to borrow money from the foreign houses here. Casually looking at the law, it appears that this bank is to be organized and run as an accommodation to the native business houses, thus taking these loans from the hands of the foreigners, but many think that a "corner" in rubber is to be attempted with the aid of this tax. It would result seriously to our very large American rubber trade if a corner could be managed controlling the rubber produced in this state. The rubber manufacturing trades of England and the continental manufacturers would also suffer.

According to United States Consul Kenneday, at Pará, "the new law has created consternation among the rubber buyers throughout the Amazon valley," and "exporters here are already indulging in gloomy forebodings." He quotes a Pará merchant, favorable to the plan, as saying that the intention of the law is to facilitate commerce, and especially the rubber trade, "by the establishment of a bank which shall be able to advance necessary funds to the *aviadores* and commerce in general in a place where ready money is very scarce and expensive, and business is handicapped accordingly."

But the sentiment of all the Pará merchants is not so favorable to the law. Frank da Costa, a very large exporter of rubber from Pará is thus quoted by Consul Kenneday:

This law is sure to work harm to the general rubber trade, but it is yet too soon to say how serious its effect may be. This bank will have 100 reis (2.5 cents) per kilogram advantage over every other buyer in Manáos, and this means practically a corner on the rubber market at that point and an extra annual cost of at least $400,000, provided the enterprise is well managed. This law is certainly a menace to the whole trade in northern Brazil. However, we can only wait and let matters develop themselves. I have seen other obnoxious and dangerous laws repealed. It may happen again.

With 12 pence as the price of the milreis, the new tax will equal £5, or $24.33 per metric ton, which is a trifle over 1.1 cent per pound avoirdupois.

CONSIDERABLE deposits of asbestos are reported to exist near the Ropes gold mine at Ishpeming, Michigan, worth from $50 to $200 per ton, and mining machinery has been ordered.

NEW TRADE PUBLICATIONS.

THE PEERLESS RUBBER MANUFACTURING CO. (New York) manufacturers of Mechanical Rubber Goods, issue under date of October, 1903, their Catalogue No. 60, which embraces not a little new material in relation to their standard products of Packing, Belting, and Hose, together with numerous specialties in allied lines. Particular mention must be made of the section devoted to Mats, which is attractively illustrated, with mat designs in colors and *fac simile*. This is one of the most attractive looking of the many attractive catalogues of the Peerless company, and a copy will be appreciated by every dealer in rubber goods who secures it. [5⅞″ × 8¼″. 150 pages.]

TYPKE & KING (16, Mincing lane, London) have issued a pamphlet of instructions for using the specialties for India-rubber of which they are manufacturers, including golden and crimson sulphurets, various pigments, lead, magnesia, and the like, and also their line of India-rubber Substitutes. The trade in America may obtain this useful little book from the firm's representative, Joseph Cantor, No. 56 Pine street, New York. [3¼″ × 5½″. 16 pages.]

THE M. LINDSAY RUBBER CO. (New York and Washington) are sending out a handsome illustrated catalogue of their "Agnota" Process Rubber Specialties, several of which have been described in THE INDIA RUBBER WORLD. The list includes gloves, nipples, ice caps, ice bags, finger cots, and so on. In fact, the process may be applied to any seamless specialties. [4¼″ × 6¼″. 22 pages.]

MULCONROY CO. INC. (Nos. 1213-1215 Market street, Philadelphia) issue a neat illustrated descriptive catalogue of Piston and Sheet Packings, for steam, hydraulic locomotive, and ammonia requirements. A wide variety is listed. [3½″ × 6″. 24 pages.]

THE DIAMOND RUBBER CO. (Akron, Ohio) have issued a neat catalogue of Rubber Garden Hose, listing their numerous brands, for a variety of purposes, and illustrating their markings in *fac simile*. A few lines of helpful descriptive matter appears in each case. [5½″ × 3¼″. 36 pages.]

ALSO RECEIVED.

THE Foster Rubber Co., No. 370 Atlantic avenue, Boston.=Friction Plug Specialties. 19 pages.

[Perfection Rubber Co.] John J. Cook, Trenton, New Jersey=Perforated Mats. 8 pages.

Tennant Auto-Tire Co., Springfield, Ohio=Automobile Tire Talk. [Tennant's puncture proof pneumatic tires.] 8 pages.

Knickerbocker Manufacturing Co, Chicago, Illinois.=Knickerbocker India-Rubber Fountain Brush. 12 pages.

The Nippon Rubber Co., Tokio, Japan.=Catalogue and Price List [of rubber belting and hose]. 4 pages.

Bauer & Black, Chicago, Illinois.=The Struggle for Supremacy. [Descriptive of the "O-P-C" suspensories.] 16 pages.

Goodyear Tire and Rubber Co., Akron, Ohio.=The Pneumatic Golf Ball. 12 pages.

Continental Caoutchouc Co., No. 298 Broadway, New York.=Price List [of "Continental" automobile tires, from the company's factory (Hanover, Germany) for the American trade.]

COLONEL WILLIAM JENNINGS BRYAN, of Nebraska, while visiting Mexico recently, with his family, was entertained at the "Hacienda Yale," an extensive private plantation, including rubber on a large scale, the property of Alfred Bishop Mason, the railroad man, and managed by his nephews, J. R. Trowbridge and R. S. Willis, near Tierra Blanca, in Vera Cruz. The hacienda was named for Yale University, where the two young men were educated.

THE LAW ON RESTRAINT OF TRADE.

A DECISION dealing with combinations in restraint of trade, rendered lately by the appellate division of the New York supreme court, while it related to the sale of books, would be equally applicable to such sales contracts as were in force a few years ago in the rubber shoe trade. R. H. Macy & Co., of New York, brought suit to restrain the American Publishers' Association from carrying out an agreement among its members not to sell their publications to any dealer who did not bind himself to retail the books at a fixed net price. The action was brought under the statute (Laws of New York, 1899, chapter 690) declaring to be illegal any contract, agreement, arrangement, or combination, whereby competition in the supply or price of any commodity of common use may be restrained or prevented. On trial the case was won by the defendants, followed by an appeal and a reversal by the higher court.

Justice Ingraham, in the prevailing decision, says that the statute does not attempt to prevent a manufacturer from fixing the price at which he will sell his product. But when the article has passed out of his hands, into the ownership of dealers engaged in general business, its free sale would be restrained, and competition in price would be prevented, by any combination of manufacturers of similar articles to refuse to sell to a dealer who presumed to offer such article at less than the retail price fixed by the manufacturers. The object of the Publishers' Association clearly was to compel every dealer in their books to fix the selling price of each book owned by him at the price designated by the publishers. Hence competition in the price of the books would be restrained or prevented, within the meaning of the statute. It was claimed, for the publishers, that their agreement related only to copyrighted books, which each publisher has a sole right to publish and sell, and that the agreement was merely carrying out their monopoly under the copyright law. But the court held that when the publisher of a copyrighted book once sells the book, the copyright law gives him no power to interfere with the property right of the purchaser in the book, by regulating the price or otherwise.

Justice McLaughlin, in a dissenting opinion, cited the case of Park *v.* National Druggists' Association, in which the court refused an injunction to restrain the defendant association from granting a rebate only when the jobbers agreed to maintain a fixed rate of prices. He thought that that decision governed the present case. Justice Van Brunt was of the same mind, and said: "I do not see why a seller of property in respect to which he has a monopoly cannot impose any conditions as to its resale that he sees fit."

AFRICAN RUBBER IN TRINIDAD.

IN regard to the rubber species *Fumtumia elastica*, formerly known as the *Kickxia Africana*, and producing the so-called "silk rubber" of Lagos, No. 33 of the *Bulletin* of the Trinidad botanic garden says:

"Our trees of this plant have made excellent progress during the past season, and some of them are now 18 feet in height. Several of them have produced seeds and large numbers of seedlings have been raised. Among the trees it is noted (as is general with seedlings), a large amount of variation appears especially in the form and size of the seed pods or follicles. Seed will be ripe about June, 1902."

The *Fumtumia* is an important rubber tree.

REVIEW OF THE CRUDE RUBBER MARKET.

AS was to be expected, the sudden and very considerable rise in Pará grades, which reached its limit as the last issue of this Journal was being printed, was followed by an early reaction, but prices are still far above any recent former level. A downward tendency was checked by the results of the Antwerp sale of Congo sorts on October 23, when higher prices were obtained than even at the September sale. Besides, the movement of rubber down the Amazon has been slower than was anticipated at the beginning of the season. In spite of prices being higher than for three years past, and the reported activity of traders in preparing for a large crop, the total receipts at Pará so far have been only slightly larger than at the same period of last season, and decidedly less than in 1901, as these figures show:

	1900.	1901.	1902.	1903.
July.....*tons.*	860	1260	1290	1280
August.....	1290	1290	1370	1230
September.....	1280	1940	1670	2010
October.....	2350	2640	2280	*a* 2280
Total, Four months.....	5780	7130	6610	6780

[*a* To October 28, 1903.]

At the same time, consumption has been on a large scale. The official returns of imports of crude India-rubber of all sorts into the United States during the first nine months of 1903 show an increase of 5,287,729 pounds over the same period of 1902, or a gain of 14 per cent. The official statement of import values of rubber for the same nine months of 1903 shows an increase of $8,270,940 over the first three quarters of 1902, or in other words, 45½ per cent. As the amount exported was almost precisely the same in both periods, it is evident that the consumption this year has been decidedly larger than last year, in spite of the fact that the average import value of all kinds of rubber this year was 61⅛ cents per pound, against only 48.2 cents during January to September in 1902.

Current prices for Pará sorts are 30 per cent. higher on an average than one year ago.

Prices of Africans and Centrals have declined during the month only about 2 cents a pound on an average. Supplies of many grades of these classes are either very low or exhausted.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on October 30—the current date:

PARA.	Nov. 1, '02.	Oct. 1, '03.	Oct. 30.
Islands, fine, new.....	72@73	107@108	97@ 98
Islands, fine, old.....	@	112@113	@
Upriver, fine, new.....	78@79	110@111	102@103
Upriver, fine, old.....	81@82	112@113	104@105
Islands, coarse, new.....	47@48	68@ 69	57@ 58
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	62@63	88@ 89	82@ 83
Upriver, coarse, old.....	@	@	@
Caucho (Peruvian) sheet.....	52@53	69@ 70	63@ 64
Caucho (Peruvian) ball.....	56@57	78@ 79	72@ 73

The market for other sorts in New York on which prices have been better maintained, as a rule is as follows:

AFRICAN.		Ikelemba.....	92 @93
Sierra Leone, 1st quality	89 @90	Madagascar, pinky	81 @82
Massai, red.....	89 @90	**CENTRALS.**	
Benguella.....	72 @73	Esmeralda, sausage	72 @73
Cameroon ball.....	64 @65	Guayaquil, strip	60 @61
Gaboon flake.....	@	Nicaragua, scrap	71 @72
Gaboon lump.....	48 @49	Panama, slab.....	54 @55
Niger paste.....	@	Mexican, scrap.....	71 @72
Accra flake.....	29 @30	Mexican, slab.....	53 @54
Accra buttons.....	None here	Mangabeira, sheet	55 @56
Accra strips.....	None here	**EAST INDIAN.**	
Loporl ball, prime	91 @92	Assam.....	80 @81
Loporl strip, do	84 @85	Borneo.....	@

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	5$800	Upriver, fine	7$050
Islands, coarse	2$800	Upriver, coarse	5$150

Exchange, 12 3/32*d.*

Last Manáos advices (October 2):

Upriver, fine 6$650/4$550 Upriver, coarse 4$550

Exchange, 12 1/16*d.*

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1903.	Total 1902.	Total 1901.
Stocks, August 31. *tons*	140	28 =	168	221	523
Arrivals, September	589	365 =	954	897	500
Aggregating	729	393 =	1122	1118	1023
Deliveries, September	641	384 =	1025	920	537
Stocks, September 30.	88	9 =	97	198	486

	PARÁ.			ENGLAND.		
	1903.	1902.	1901.	1903.	1902.	1901.
Stocks, August 31. *tons*	120	97	190	650	1525	980
Arrivals, September	1980	1640	1850	590	719	645
Aggregating	2100	1737	2040	1240	2244	1625
Deliveries, September	1860	1651	1790	1000	969	600
Stocks, Sept. 30.	240	86	250	240	1275	1025

	1903.	1902.	1901.
World's visible supply, September 30. *tons*	1719	2595	2797
Pará receipts, July 1 to September 30	4500	3962	4112
Pará receipts of Caucho, same dates	415	368	283
Afloat from Pará to United States, Sept. 30	492	420	408
Afloat from Pará to Europe, September 30	650	616	628

NEW YORK RUBBER PRICES FOR SEPTEMBER (NEW RUBBER).

	1903.	1902.	1901.
Upriver, fine	1.00@1.10	74@78	87@91
Upriver, coarse	79@ 91	59@62	65@66
Islands, fine	97@1.08	71@75	84@88
Islands, coarse	60@ 70	46@48	48@50
Cametá, coarse	61@ 68	47@50	50@51

United States Crude Rubber Imports—Official.

[NINE MONTHS ENDING SEPTEMBER 30.]

	1901.	1902.	1903.
United Kingdom. *pounds*	4,863,693	5,070 006	7,282,365
Germany	1,340,184	1,437,160	1,706,430
Other Europe	6,781,870	5,270,264	6,870 843
Central America	976,207	806,435	836,904
Mexico	222,028	224.353	216,692
West Indies and Bermuda	31.434	47,155	9.054
Brazil	24,927,390	23,526,180	24,433,802
Other South America	1,000,183	806,246	1,166,057
East Indies	315,273	402,927	369,516
Other countries	22,778	19,843	6,735
Total. *pounds*	40,481,040	37,610,569	42,898.398
Exports	2,921,765	2.537,333	2,583,197
Net imports	37,559.275	35,073,236	40,315,201
Value of imports	$20,869,070	$18,118,144	$26.389,084
Av. Value per pound	51.6 cents.	48.2 cents.	61.5 cents.

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 58 William street, New York), advises us:

"During the first half of October the demand for paper continued very light, and rates ran from 6½ @ 7½ per cent., but the latter part of the month has shown a slight improvement in demand, and rates eased a little to about 6 @ 7 per cent. for the usual average of rubber paper."

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots—in cents per pound; no change of importance is to be noted this month:

Old Rubber Boots and Shoes—Domestic	6⅞ @ 7
Do —Foreign	6¼ @ 6⅜
Pneumatic Bicycle Tires	4 @ 4⅛
Solid Rubber Wagon and Carriage Tires	7
White Trimmed Rubber	8¾ @ 9
Heavy Black Rubber	4¼
Air Brake Hose	2½ @ 2¾
Fire and Large Hose	2
Garden Hose	1½
Matting	1

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Since the sale of September 17 the only offering of rubber in this market has been on October 2, when 7⅛ tons of varied sorts brought good prices. The next large sale by inscription will be on October 23, when about 414 tons of Congo sorts will be offered. Among the lots to be disposed of are the following, with the broker's estimations:

43 tons Uelé *francs*	9.55
22 " Aruwimi	9.70
54 " Upper Congo balls	10.12½
24 " Upper Congo red—Yakoma	10.12½

Receipts since January 1 show a decline of about 300 tons. Sales during the same period show an increase, with the result that stocks here have been reduced. C. SCHMID & CO.

Antwerp, October 12, 1903.

ANTWERP RUBBER STATISTICS FOR SEPTEMBER.

DETAILS.	1903.	1902.	1901.	1900.	1899.
Stocks, Aug. 31. *kilos*	319,986	756.401	684.355	1,056,124	400,432
Arrivals, September	455,762	470,084	887.256	417.050	232,517
Congo sorts	442.435	429,855	871,360	359,232	230,123
Other sorts	13,327	40,229	15,896	57,818	2,394
Aggregating	775,748	1,226,485	1,571,611	1,473,174	632.949
Sales, September	353,890	769,774	675.468	468,412	325,467
Stocks, Sept. 30	421,858	456,711	896,143	1,004,762	307,482
Arrivals since Jan. 1	3,782,156	4,028,920	4,726,126	4,584,468	2,628,387
Congo sorts	3,413,763	3,725,404	4,382,856	3,866,145	2,324,769
Other sorts	368,393	303 516	343,270	718 323	303 618
Sales since Jan. 1	4,018,403	3,986,918	4,443,932	3,871,697	2,584,245

RUBBER ARRIVALS AT ANTWERP.

OCTOBER 12.—By the *Philippeville*, from the Congo:

Bunge & Co	(Société Générale Africaine) *kilos*	304,000	
Do	(Chemins de fer des Grand Lacs)	15,700	
Do	(Société Anversoise)	48,000	
Do	(Société "La Kotto")	3,000	
Société A B I R		122,000	
Comptoir Commercial Congolais		800	
Société Coloniale Anversoise	(Cie. de Lomami)	12,000	
Do	(Cie. du Kasai)	63,500	
Do		800	
Do		9.000	
Do		8,600	
M. S. Cols		3.800	
W. Mallinckrodt & Co	(Alimaienne)	12,000	
Do	(Cie. des Caoutchoucs & Produits de La Lobay)	2,600	
Comptoir des Produits Coloniaux	(Cie. de Ekela & Kadei Sangha)	5,800	
Charles Dethier	(La Haut Sangha)	3,300	
Do	(La M'Poko)	7,800	
Divers		2,500	631,500

London.

EDWARD TILL & Co. [October 1] report stocks:

		1903.	1902.	1901.
LONDON	Pará sorts *tons*	—	—	—
	Borneo	14	128	134
	Assam and Rangoon	5	12	87
	Other sorts	178	361	481
	Total	197	501	702
LIVERPOOL	Pará	243	1273	1024
	Other sorts	426	690	1076
Total, United Kingdom		866	2464	2802
Total, September 1		1364	2731	2736

Total, August 1	1781	3053	2944
Total, July 1	2285	3595	3128
Total, June 1	2248	3687	3502
Total, May 1	2539	3788	3597

PRICES PAID IN AUGUST.

	1903.	1902.	1901.
Pará fine, hard	4/ 1 @4/3	3/0¼ @3/3	3/7¼@3/10½
Do soft	3/11 @4/2½	2/10¼@3/1½	3/6¼@3/ 9¼
Negroheads, scrappy	3/ 2 @3/3¾	2/ 3½@2/6	2/9 @2/9¼
Do Islands	2/ 5½@2/6½	—	1/10 @2/0½
Bolivian	4/ 2½@4/3½	3/ 0¼@3/3	3/7

PRICES PAID IN SEPTEMBER.

	1903.	1902.	1901.
Pará fine, hard	4/2 @4/8¼	3/1½@3/4	3/7 @3/ 8
Do soft	4/2 @4/7¼		3/7¾@3/ 9¼
Negroheads, scrappy	3/3½@3/8½	2/7	2/8 @2/ 9
Do Islands	2/6 @2/9	1/11¾	2/0½
Bolivian	4/4 @4/8½	3/1¼@3/4	3/9

OCTOBER 16.—A large business has been done in Pará sorts during the week, at declining prices, but at the close the market is firmer, with an advance of 1*d.* per pound. Fine hard is worth 4*s.* 4½*d.* spot and 4*s.* 4*d.* for forward delivery, and soft 4*s.* 2*d.* spot and buyers of forward delivery at 4*s.* 1½*d.*, but no sellers. Scrappy negroheads quiet; Cametas lower, and some forced sales at 2*s.* 5½*d* @2*s.* 5¾*d.* Peruvian ball 3*s.* 4½*d.*@3*s.* 5*d.*; slab 2*s.* 9*d.*; scrappy 3*s.* 6*d.* At to day's auctions Central American, Mozambique, and Madagascar rubbers met an active demand, and extreme rates were obtained for some specially attractive lots. Colombian: good clean brown scrap 3*s.* 4*d.*; fair to good black sheet and scrap mixed virgin 3*s.* 1¾*d.*@3*s.* 2¼*d.*; inferior part heated 2*s.* 8*d* @3*s.*; white scrap and sheet 2*s.* 10*d* @3*s.* Madagascar (Majunga): fair scrappy 2*s.* 6½*d.*@2*s.* 8*d.*; mixed black coated and spongy 2*s* 3*d.*@2*s.* 5¼*d.* Mozambique: fine clean red small ball, 3*s.* 11¼*d.*; fair to good 3*s.* 8*d* @3*s.* 9¾*d.*; rather weak, part sandy 3*s.* 5¾*d.*; stickless sausage rather mixed 3*s.* 8*d.*; fair to good Beira ball and sausage 3*s.* 7½*d.*@3*s.* 8*d.*; Lama ball white part sandy 3*s.* 4*d.*; sandy reddish ball 2*s.* 7*d.*

CULTIVATED RUBBER—"PARA" QUALITY.

OCTOBER 2.—Ceylon fine biscuits 4*s.* 9¼*d.* [=$1.15½]; scrap 3*s.* 6*d.* Straits Settlements fine 4*s.* 9¼*d.*; scrap 3*s.* 3*d.*

OCTOBER 16.—Ceylon fine 4*s.* 5*d.*@4*s.* 6*d* [=$1.07@$1.09]; scrap 3*s* @3*s.* 3*d.*

Bordeaux.

R. HENRY favors THE INDIA RUBBER WORLD with details of arrivals for 1903 which permit the record to be brought down to October 1, as follows [in kilograms]:

GRADES.	Jan.-June.	Jul.-Aug.	Sept.	Total.
Soudan twists, Soudan niggers, Conakry niggers	356,200	178,100	88,600	622,900
Gambia	77,000	4,500	4,900	86,400
Bassam	25,500	2,400	150	28,050
Lahou	—	2,166	300	2,466
Madagascar	—	1,900	200	2,100
Java	—	1,500	—	1,500
Congo sorts	18,000	8,500	9,500	36,000
Mexican	1,500	—	—	1,500
Other sorts	600	—	—	600
Totals	478,800	199,066	103,650	781,516

Total arrivals for the whole of 1902 were 678,400 kilos and in the preceding year only 235,380 kilos.

PRICES OCTOBER 10 IN FRANCS PER KILOGRAM.

Sierra Leone sorts:		Bassam lumps	5.90@ 6.70
Niggers, red I.	10 30@10.45	Bassam cakes	7.40@ 8.50
Niggers, white, I.	10. @10.30	Lahou twists	6.70@ 6.95
Niggers, II	8.10@ 8 55	Majunga	7.40@ 7 50
Niggers, III	5.50@ 7.50	Tamatave	8. @ 9.15
Twists	8.95@10.10	Madagascar niggers	4.30@ 7.75
Cassamance	6. @ 8.90	New Caledonia	8. @ 8.50
Gold Coast lumps	6.70@ 6.95		

Liverpool.

WILLIAM WRIGHT & CO. report [October 1]:

Fine Pará—As anticipated in ours of last month, a further advance has taken place. The statistical position has made itself felt. Strong buying from America, with small stocks and supplies, has resulted in an advance of 5*d.* per pound. The position is still extremely strong, the market being very bare of supplies; stocks are smaller than they have ever been for years, and supplies due in October are small. Everything points to a further advance next month, as the demand, even though manufacturers are only buying when forced to, has overtaken the supply.

Africans, in sympathy with Pará, are dearer and in good request; stocks are very small, especially for the better grades.

FRED. STERN & CO., 1, Harrington street, Liverpool, announce that they are successors to the late firm of Kramrisch & Co., India-rubber merchants in the same city.

EDMUND SCHLÜTER & Co. report Liverpool stocks:

	Aug. 31.	Sept. 30.		Aug. 31.	Sept 30.
Pará—1st hands	349	82 tons.	Peruvians	150	31 tons.
Fine	160	43 "	Africans	305	217 "
Medium	43	19 "	Mollendo	81	420 pkg.
Negroheads	46	29 "	Mangabeira	21	122 "
Pará—2d hands	301	161 "	Pernambuco	45	111 "
Fine	246	131 "	Maniçoba	90	1023 "
Medium	20	9 "	Ceará	—	174 "
Negroheads	35	21 "	Assare	21	152 "
Total Pará	650	243 "			

Rubber Receipts at Manaos.

DURING September and the first three months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	SEPTEMBER.			JULY-SEPTEMBER.		
	1903.	1902.	1901.	1903.	1902.	1901.
Rio Purús *tons*	429	271	320	886	768	880
Rio Madeira	263	188	42	755	734	594
Rio Juruá	254	227	244	256	231	304
Rio Javary—Iquitos	71	55	40	185	155	155
Rio Solimões	59	114	177	84	163	257
Rio Negro	—	44	1	15	65	16
Total	1076	893	824	2181	2116	2206
Caucho	133	43	150	341	259	391
Total	1209	942	974	2522	2375	2597

Gutta-Percha.

WEISE & Co. (Rotterdam) report exports from Singapore for the first eight months of five years past as follows:

	1899.	1900.	1901.	1902.	1903.
Tons	3757	3708	3756	2744	2353

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weights in Pounds.*]

September 28.—By the steamer *Prins Willem*, from Orinoco:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total
Middleton & Co.	10,000	.....	.....	.....=	10,000

October 3.—By the steamer *Polycarp*, from Pará:

United States Rubber Co.	31,000	6,600	35,000	.....=	72,600
Poel & Arnold	32,100	7,500	31,600	.....=	71,200
William Wright & Co.	6,000	700	63,100	.....=	69,800
A. T. Morse & Co.	31,900	4,800	8,100	900=	45,700
New York Commercial Co.	12,100	3,200	4,800	2,300=	22,400
L. Hagenaers & Co.	2,800	.....	2,100	.....=	4,900
Total	115,900	22,800	144,700	3,200=	286,600

October 14.—By the steamer *Gregory*, from Manáos and Pará:

United States Rubber Co.	143,700	19,900	73,200	....=	236,800
New York Commercial Co.	90,000	38,700	15,500	600=	144,800
William Wright & Co.	79,600	6,200	47,900	500=	134,200
A. T. Morse & Co.	30,300	4,200	79,500	3,000=	117,000
Poel & Arnold	40,000	7,100	23,700	1,700=	72,500
Thomsen & Co.	10,700	1,200	6,200	.... =	18,100
L. Hagenaers & Co.	8,500	.....	3,700	.....=	12,200
Total	402,800	77,300	249,700	5,800=	735,600

October 21.—By the steamer *Sobralense*, from Manáos and Pará:

A. T. Morse & Co.	74,500	11,900	150,500	15,400=	252,300
Poel & Arnold	58,100	13,300	62,200	4,500=	138,100
William Wright & Co.	67,900	7,300	41,400	.....=	116,600
United States Rubber Co.	10,700	2,400	30,900	.....=	44,000
Hagemeyer & Brunn	33,700	3,100	6,000	.... =	42,800
L. Hagenaers & Co.	17,100	.....	4,600	.....=	21,700
New York Commercial Co.	5,100	2,100	1,800	.... =	9,000
Total	267,100	40,100	297,400	19,900=	624,500

[NOTE.—The steamer *Cearense*, due at New York on November 4, has on board 430 tons of Rubber.]

PARA RUBBER VIA EUROPE.

POUNDS.

SEPT. 24.—By the *Teutonic*=Liverpool:
A. T. Morse & Co. (Fine). 22,500

SEPT. 26.—By the *Lucania*=Liverpool:
A. T. Morse & Co. (Fine) 11,000
A. T. Morse & Co. (Coarse)..... 22,500
George A. Alden & Co. (Fine)..... 18,000 51,500

SEPT. 26.—By the *Zeeland*=Antwerp:
A. T. Morse & Co. (Fine) 17,000

OCT. 2.—By the *Germanic*=Liverpool:
A. T. Morse & Co. (Fine). 25 000
George A. Alden & Co. (Fine)..... 22,000
William Wright & Co. (Fine)..... 18,000
Poel & Arnold (Caucho). 56.000
Poel & Arnold (Coarse)..... 5,000 126,000

OCT. 3.—By the *Cedric*=Liverpool:
George A. Alden & Co. (Fine)..... 44 000
A. T. Morse & Co. (Coarse) 11,000 55,000

OCT. 8.—By the *Majestic*=Liverpool:
A. T. Morse & Co. (Fine)..... 29,000
William Wright & Co. (Coarse).. .. 11,500 40,500

OCT. 14.—By the *Oceanic*=Liverpool:
Poel & Arnold (Fine) 80,000
Poel & Arnold (Medium)..... 10.000
Poel & Arnold (Coarse).. .... 20,000 110,000

OCT. 22.—By the *Teutonic*=Liverpool:
Poel & Arnold (Fine)..... 28,000

OCT. 24.—By the *Lucania*=Liverpool:
Poel & Arnold (Fine)..... 21,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

POUNDS.

SEPT. 25.—By *El Norte*=New Orleans:
Manhattan Rubber Mfg. Co..... 5,000
A. T. Morse & Co..... 3 000
A. N. Rotholz..... 1 500
Eggers & Heinlein 1,200
Neuss, Hessiein & Co..... 1 200
For Europe 1,000 12,900

SEPT. 26.—By the *Jason*=Mexico:
H. Marquardt & Co..... 1,500
Samuels & Cummings 200
Graham, Hinkley & Co..... 300 2,000

SEPT. 26.—By the *Tennyson*=Bahia:
J. H. Rossback & Bros..... 12,000

SEPT. 28.—By the *Philadelphia*=La Guayra:
Thebaud Brothers..... 6,500

SEPT. 29.—By the *Seguranca*=Colon:
Hirzel, Feltman & Co. 15.300
A. Santos & Co..... 12,200
G. Amsinck & Co..... 3 500
Kunhardt & Co.... 3,200
Livingstone & Co 3,000
American Trading Co 2,000
Lawrence Johnson & Co..... 1.800
Dumarest & Co. 1.800
Higgins & Caldenor.... 1,800
Isaac Brandon & Bros... 1,700
Bock, Andrews & Co..... 1.400
Fidanque Bros. & Co 1,200
R. G Barthold..... 1,400
Ascensio & Cossio.... 1,200
Eggers & Heinlein 600
W. Loaiza & Co. 400 52,600

SEPT. 30.—By the *Alene*=Cartagena, etc.:
D. A. DeLima & Co..... 5.500
G. Amsinck & Co..... 2,000
Kunhardt & Co 1,500
J. H. Recknagel & Co..... 1,000
Roldan & Van Sickle..... 1,000
Pedro A. Lopaz 500 11,500

OCT. 2.—By *El Siglo*=New Orleans:
A. T. Morse & Co..... 2 500
For Europe..... 2,000 4,500

OCT. 6.—By *Saratoga*=Colon:
Bock, Andrews & Co..... 1,500
Fidanque Bros. & Co..... 1,200
Isaac Brandon & Bros..... 1,100
Eggers & Heinlein..... 500
American Trading Co 300 4,600

OCT. 6.—By the *Valencia*=Greytown:
A. D. Straus & Co..... 5 500
E. B. Strout..... 5.500
Livingstone & Co..... 5,000
G. Amsinck & Co..... 2,200
Kunhardt & Co..... 2.000
Lawrence Johnson & Co... 1,500
United Fruit Co 1,000
Graham, Hinkley & Co..... 600
John Boyd, Jr. & Co..... ..... 500 23,800

OCT. 5.—By the *Seneca*=Tampico:
George A. Alden & Co..... 10,000

CENTRALS—Continued.

OCT. 13.—By the *Proteus*=New Orleans:
G Amsinck & Co..... 6.000
A. T. Morse & Co..... 5,000
Manhattan Rubber Mfg. Co. 1,500 12,500

OCT. 13.—By the *Allet*=Carthagena, etc.:
Jaoquin Ferro..... 3 300
Am rican Trading Co.... ..... 2 500
Punderford & Co..... 1,000
J. H. Recknagel & Co..... 2,500 9,300

OCT. 17.—By the *Calderon*=Bahia:
J. H. Rossbach & Bros..... 40,000

OCT. 13.—By the *Yucatan*=Colon:
Hirzel, Feltman & Co 48,000
A. Santos & Co. 6.500
G. Amsinck & Co..... 5.800
Lawrence Johnson & Co..... 5.800
American Trading Co 5,000
A. M. Capen Sons..... 4.000
Roldan & Van Sickle..... 3,700
Meyer Hecht 2.200
H. Marquardt & Co 2,200
L. N. Chemedlin & Co.. ..... 1 300
Smithers, Nordenholt & Co 1,300
W. R Grace & Co..... 1,100
Ascensio & Cossio..... 900
Dumarest & Co..... 1,000 88,800

OCT. 19.—By the *Esperanza*=Mexico:
H. Marquardt & Co..... 2.000
E. Steiger & Co..... 1,500
Harburger & Stack 2,000
Strube & Ultzen..... 1,000
L. N. Chemedlin & Co.... .... 500 7,000

OCT. 20.—By the *City of Washington*=Colon:
Banco de Exportasos. 6,000
American Trading Co..... 4 700
Roldan & Van Sickle 3,200
Isaac Brandon & Bros..... 2,700
Dumarest & Co 1.800
Meyer Hecht 1.800
Fidanque Bros. & Co..... 1 600
D A. De Lima & Co 1,500
D. N. Carrington & Co... 1,500
A. M. Capen Sons 1,400
L. N Chemedlin & Co..... 1,200
G. Amsinck & Co..... 1.800
Lawrence Johnson & Co..... 1.100
Everett Heaney & Co.... 800
Kunhardt & Co 800
Harburger & Stack..... 600
Eggers & Heinlein..... 500
Pedro A. Lopez.... ..... 400 33,400

OCT. 22.—By the *Teutonic*=Liverpool:
Joseph Cantor..... 5,000

OCT. 23.—By the *El Cid*=New Orleans:
A.T. Morse & Co..... 6,500
A. N. Rotholz.... ..... 4,000 10,500

AFRICANS.

POUNDS.

SEPT. 23.—By the *Pennsylvania*=Hamburg:
Poel & Arnold 11,500
Rubber Trading Co.... ..... 10,000 21.500

SEPT. 24.—By the *Teutonic*=Liverpool:
Poel & Arnold..... 55 000
George A. Alden & Co. 51.000
United States Rubber Co..... 34,000 140,000

SEPT. 26.—By the *Lucania*=Liverpool:
Poel & Arnold 55.000
George A Alden & Co 45.000
A. T. Morse & Co..... 6,000 106,000

SEPT. 26.—By the *St Louis*=London:
George A. Alden & Co 28,000
United States Rubber Co 15,000 38,000

SEPT 28.—By the *Minnehaha*=London:
George A. Alden & Co..... ... . 5.000

SEPT 29.—By the *Zeeland*=Antwerp:
A. T. Morse & Co 105.000
Poel & Arnold 25.000
Rubber Trading Co 11.000
George A. Alden & Co..... 9.000 150.000

SEPT 29.—By the *Rotterdam*=Rotterdam:
A. T. Morse & Co..... 22,000

SEPT. 30.—By the *Altamira*=Bordeauz:
A. T. Morse & Co. 15,000
Poel & Arnold..... 10,000 25,000

OCT. 1.—By the *Patricia*=Hamburg:
Rubber Trading Co 16.000
George A. Alden & Co..... 13,000
Poel & Arnold 8,000 37,000

OCT. 2.—By the *Germanic*=Liverpool:
George A. Alden & Co..... 42,000
Robinson & Tallman..... 11.500
H. A. Gould Co..... 8,000
Poel & Arnold..... 3,000 64,500

AFRICANS—Continued.

OCT. 3.—By the *Cedric*=Liverpool:
William Wright & Co..... 11,500

OCT. 3.—By the *New York*=London:
George A. Alden & Co. 17 000
Robinson & Tallman..... 10.000
Poel & Arnold 10.000
A. T. Morse & Co. 7,000 44,000

OCT. 6.—By the *Finland*=Antwerp:
A. T. Morse & Co.... 210,000
Poel & Arnold..... . 72,000
William Wright & Co.. 58,000
George A. Alden & Co 46 000
Rubber Trading Co..... ... . 15,000 401,000

OCT 8.—By the *Majestic*=Liverpool:
United States Rubber Co.... 88,000
George A. Alden & Co..... .. 37 000
A. T. Morse & Co 22,000 147,000

OCT 9.—By the *Phoenicia*=Hamburg:
Rubber Trading Co..... 15,000
Poel & Arnold 11,000
A. T. Morse & Co 7,000 33,000

OCT. 13.—By the *Campania*=Liverpool:
A. T. Morse & Co..... ..... 26 000
Poel & Arnold..... 15,000
Robinson & Tallman 2.500 43,500

OCT 14.—By the *Oceanic*=Liverpool:
George A. Alden & Co..... ..... 55.000
Poel & Arnold 14,000
A. T. Morse & Co..... ..... 7,000 74,000

OCT. 14.—By the *Pretoria*=Hamburg:
A. T. Morse & Co..... .... 22.000
Joseph Cantor..... .. .... 11.500
Poel & Arnold..... 11,500 45,000

OCT. 22.—By the *Teutonic*=Liverpool:
George A. Alden & Co.?..... 45,000
A. T. Morse & Co..... 11,000
H. A. Gould Co..... 6,000 62,000

OCT. 23.—By the *Graf Waldersee*=Hamburg:
George A. Alden & Co.... 26,000
Rubber Trading Co..... ..... 15,000 41,000

OCT. 24.—By *Lucania*=Liverpool:
A M. Morse & Co..... 15,000
George A Alden & Co.... 5,000
Rubber Trading Co..... . 3,000
Robinson & Tallman 2,000 25,000

EAST INDIAN.

POUNDS.

SEPT. 26.—By the *St. Louis*=London:
Poel & Arnold. 10,000

OCT. 3 —By the *New York*=London:
Poel & Arnold 14,000
Robinson & Tallman 2,000 16,000

OCT. 10.—By the *Philadelphia*=London:
Poel & Arnold..... 15,500

OCT. 14.—By the *Kennebec*=Singapore:
Poel & Arnold 7,000
William Wright & Co. 7,000 14,000

OCT. 17.—By the *St. Louis*=London:
Poel & Arnold..... 11,500

OCT. 21.—By the *Heathford*=Singapore:
Robert Branss & Co... 20,000
William Wright & Co..... .... 15,000 35,000

PONTIANAK.

OCT. 10.—By the *E. B. Sutton*=Singapore:
Robert Branss & Co 11,000

OCT. 14.—By the *Kennebec*=Singapore:
Poel & Arnold 250,000
Robert Branss & Co..... .. 134,000
William Wright & Co.... 145,000
Rubber Trading Co.... .... 30 000
J. H. Recknagel & Co..... 25,000 585,000

OCT. 19.—By the *Albenga*=Singapore:
Poel & Arnold..... 165,000

OCT 21.—By the *Heathford*=Singapore:
Poel & Arnold..... 670,000
Robert Branss & Co 165.000
J. H. Recknagel & Co 50,000 885,000

GUTTA-PERCHA AND BALATA.

POUNDS.

SEPT. 23.—By the *Pennsylvania*=Hamburg:
To Order..... 6,500

OCT. 9.—By the *Phœnicia*=Hamburg:
To Order..... 6,500

OCT. 14.—By the *Oceanic*=Liverpool:
Earle Brothers..... 7,000

OCT. 14.—By the *Kennebec*=Singapore:
William Wright & Co..... 7,000

BALATA.

OCT. 19.—By the *Maraval*=Trinidad:
Cadenas & Coe..... 2,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—SEPTEMBER.

Imports:	POUNDS.	VALUE.
India-rubber	3,967,609	$2,729,974
Gutta-percha	9,929	7,239
Gutta-jelutong (Pontianak)	791,416	22,177
Total	3,788,954	$2,759,390

Exports:		
India-rubber	311,829	$201,081
Reclaimed rubber	86,689	10,911
Rubber Scrap Imported	815,087	$14,427

BOSTON ARRIVALS.

	POUNDS.
SEPT. 1.—By the *Bohemian*=Liverpool:	
George A. Alden & Co.—African	2,740
SEPT. 1.—By the *New England*=Liverpool:	
George A. Alden & Co—African	7,101
SEPT. 5.—By the *Ivernia*=Liverpool:	
George A. Alden & Co.—African	3,125
SEPT. 10.—By the *Vaderland*=Antwerp:	
George A. Alden & Co.—African	101,937

[Reported in New York arrivals in our last issue.]

SEPT. 28.—By the *Sachem*=Liverpool:		
Poel & Arnold—African	8,500	
Poel & Arnold—Caucho Slab	61,966	72,466
Total		187,389

[Value, $136,616.]

GUTTA-PERCHA.

SEPT. 14.—By the *Lancastrian*=London:	
Poel & Arnold	2,024

SEPTEMBER EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Frank da Costa & Co.	69,078	11,468	114,412	1,950	196,908	34,176	1,780	37,272	—	73,228	270,136
Cmok, Schrader & Co.	5,780	2,040	46,660	—	54,480	133,280	16,830	51,160	600	201,870	256,350
Neale & Staats	—	—	107,756	—	107,756	60,333	7,203	1,580	—	69,116	176,872
Adelbert H. Alden	26,430	16,320	7,220	135	50,105	30,140	3,910	32,450	3,162	69,662	119,767
Denis Crouan & Co.	21,778	1,681	39,785	—	63,244	1,668	—	—	—	1,668	64,912
J. Marques	6,189	770	4,774	—	11,733	23,195	2,021	17,048	—	42,264	53,997
Pires, Teixeira & Co.	10,635	586	5,127	—	16,348	4,898	—	3,324	—	8,222	24,570
Kanthack & Co.	—	—	—	—	—	11,963	944	6,153	—	19,060	19,060
Direct from Iquitos	—	—	—	—	—	43,411	14,159	9,682	85,792	153,044	153,044
Direct from Itacoatiara	—	—	—	—	—	335	—	119	—	454	454
Direct from Manáos	242,618	46,317	44,506	3,822	337,263	256,710	62,240	44,612	16,510	380,072	717,335
Total for September	382,508	79,182	370,240	5,907	837,837	600,109	109,087	203,400	106,064	1,018,660	1,856,497
Total for January-August	4,599,938	1,121,178	3,258,615	1,070,119	10,049,850	5,500,571	684,430	1,598,695	2,560,912	10,344,608	20,394,458
TOTAL SINCE JANUARY 1.	4,982,446	1,200,360	3,628,855	1,076,026	10,887,687	6,100,680	793,517	1,802,095	2,666,976	11,363,268	22,250,955

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903	3,115,309	233,303	2,882,096
January-July	35,539,720	1,751,513	33,788,207
Eight months, 1903	38,655,119	1,984,816	36,670,303
Eight months, 1902	33,754,506	2,300,776	31,453,730
Eight months, 1901	37,137,470	2,656,064	34,481,406

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903	2,890,160	2,414,160	476,000
January-July	32,200,112	23,013,872	9,186,240
Eight months, 1903	35,090,272	25,428,032	9,662,240
Eight months, 1902	31,948,784	20,225,968	11,722,816
Eight months, 1901	35,513,520	21,383,488	14,130,032

GERMANY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903	2,305,380	557,260	1,748,120
January-July	21,163,560	7,211,160	13,952,400
Eight months, 1903	23,468,940	7,768,420	15,700,520
Eight months, 1902	22,307,780	8,774,260	13,533,520
Eight months, 1901	19,126,140	6,601,320	12,524,820

ITALY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903	54,560	—	54,560
January-July	1,021,240	100,760	920,480
Eight months, 1903	1,075,800	100,760	975,040
Eight months, 1902	964,260	81,620	882,640
Eight months, 1901	1,048,300	92,840	955,460

FRANCE.*

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903	1,086,580	818,180	268,400
January-July	9,651,840	5,300,020	4,351,820
Eight months, 1903	10,738,420	6,118,200	4,620,220
Eight months, 1902	11,578,160	5,625,840	5,952,320
Eight months, 1901	11,243,320	7,001,500	4,241,820

AUSTRIA-HUNGARY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903	260,920	440	260,480
January-July	1,723,480	16,720	1,706,760
Eight months, 1903	1,984,400	17,160	1,967,240
Eight months, 1902	1,742,840	11,000	1,731,840
Eight months, 1901	1,727,220	19,580	1,707,640

BELGIUM.†

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903			
January-July	4,017,768	3,079,496	938,272
Eight months, 1903			
Eight months, 1902			
Eight months, 1901			

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

* General Commerce. † Special Commerce.